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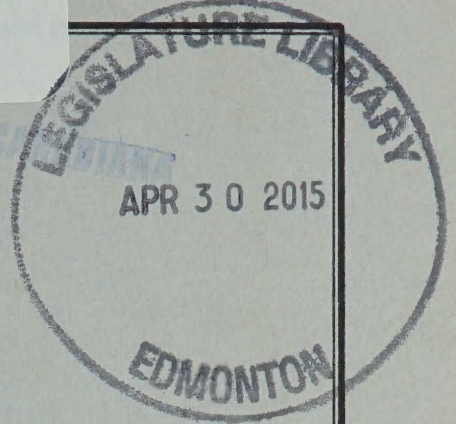
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3/ **ANNUAL REPORT**

OF THE

2/ **Department of Public Health**

INCLUDING

Vital Statistics Division

PROVINCE OF ALBERTA

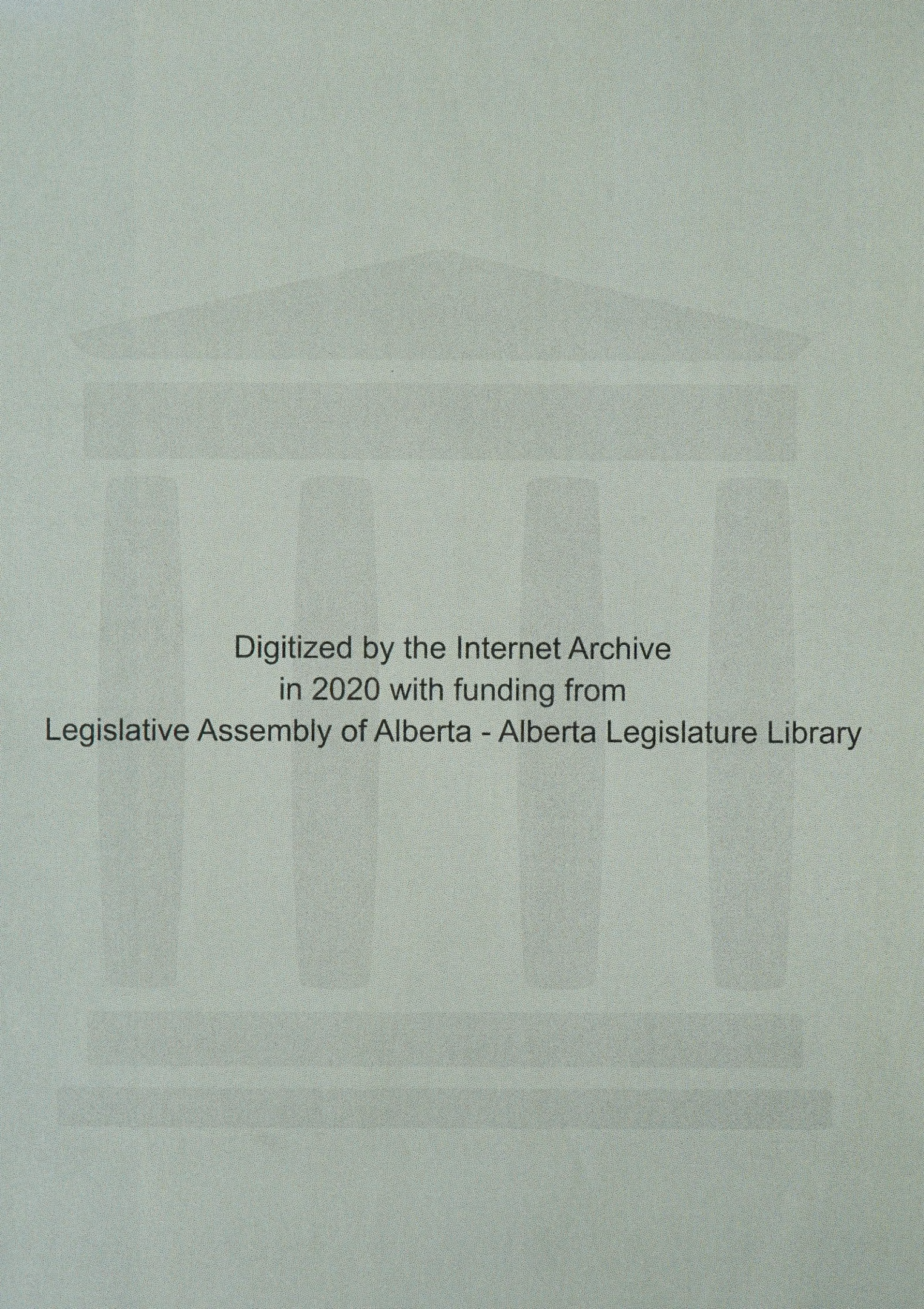
1964

PUBLISHED BY ORDER OF THE LEGISLATIVE ASSEMBLY

EDMONTON, ALBERTA

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OF THE

Department of Public Health

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Vital Statistics Division

PROVINCE OF ALBERTA

1964

PUBLISHED BY ORDER OF THE LEGISLATIVE ASSEMBLY

EDMONTON, ALBERTA
Printed by L. S. WALL, Printer to the Queen's Most Excellent Majesty
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November 30, 1965.

TO HIS HONOUR,

J. PERCY PAGE,

Lieutenant Governor of the Province of Alberta.

SIR:

I have the honour to transmit herewith, the Annual Report of the Department of Public Health for the year 1964.

I have the honour to be, Sir,

Your obedient Servant,

J. DONOVAN ROSS, B.A., M.D.,

Minister of Health.

November 30, 1965.

TO THE HONOURABLE DR. J. DONOVAN ROSS,
MINISTER OF HEALTH,
Administration Building, Edmonton, Alberta.

SIR:

I have the honour to submit herewith, the Forty-Sixth Annual Report of the Department of Public Health.

I have to honour to be, Sir,

Your obedient Servant,

M. G. McCALLUM, B.Sc., M.D., D.P.H.,
Deputy Minister of Health.

CONTENTS

PART I

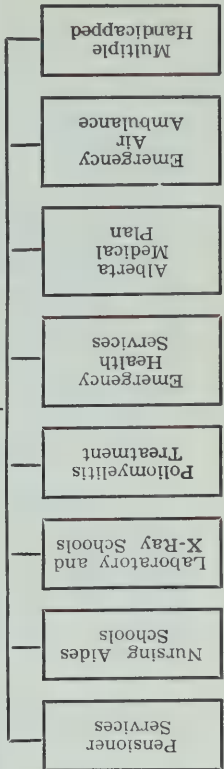
	Page
Summary	1
Division of Local Health Services	15
Communicable Diseases	17
Health Units	34
Public Health Nursing	36
Maternal and Child Health	39
Dental Health Services	41
Health Education	50
Nutrition Services	52
Entomology and Vector Control	57
Provincial Poison Control Services	63
Division of Medical Services	69
Cystic Fibrosis	69
Emergency Health Services	69
Juvenile Amputee Clinic	69
Alberta Medical Plan	70
Registry for Handicapped Children and Adults	70
Diabetic Drug Program	71
Phenylketonuria Therapy Program	71
Rheumatic Fever Prophylaxis Program	71
Emergency Air Ambulance Service	72
Poliomyelitis Treatment Program	72
Social Service Recipients Treatment Services	79
Schools for Nursing Aides	80
Nursing Recruitment Program	80
Laboratory and X-Ray School	81
Division of Cancer Services	82
Division of Social Hygiene	85
Provincial Laboratories	89
Division of Sanitary Engineering	96
Division of Industrial Health Services	110
Civil Service Nurse	112
Division of Arthritis Services	114
Division of Cerebral Palsy Clinics	115
Division of Tuberculosis Control	121
Division of Mental Health	134
Provincial Guidance Clinics	134
Active Treatment Mental Hospitals	151
Provincial Mental Hospital, Ponoka	156
Provincial Mental Institute, Edmonton	165
Chronic Hospitals	177
Provincial Mental Hospital, Claresholm	177
Provincial Auxiliary Mental Hospital, Raymond	182
Rosehaven, Camrose	186
Institutions for Mental Defectives	189
Provincial Training School, Red Deer	199
Deerhome, Red Deer	200
Emotionally Disturbed Children's Unit	205
Linden House, Red Deer	206
Eugenics Board	210
National Health Grants	212
Blood Transfusion Service	213

PART II

Vital Statistics (See separate Contents Page)

Note: See separate publication covering Annual Report of the Hospitals Division for the year 1964.

June - 1964



PROVINCIAL BOARD OF HEALTH

The Provincial Board of Health met on four occasions during 1964. Some of the major items considered during these meetings are reviewed in this report.

There were no changes in Board membership during the year. Dr. M. G. McCallum, Provincial Medical Officer of Health, continued as Chairman, with Dr. R. D. Stuart, Provincial Bacteriologist, and Mr. H. L. Hogge, Provincial Sanitary Engineer, as the other members. Mr. L. E. Stewart, Chief Public Health Inspector, acted as Secretary.

Regulations Passed or Amended During The Year

Alberta Regulations 56/64 and 344/64 (O.C.'s 184-64 and 1147-64). Amendments to Regulations Governing Restaurants. These amendments provide that hotels and motels which supply complimentary meals to guests are considered to be operating a restaurant. They also permit restaurants to operate smorgasbords subject to proper public health control.

Alberta Regulation 57/64 (O.C. 185-64). Amendments to Regulations Governing the Manufacture and Sale of Cheese in the Province of Alberta. These amendments require that persons employed in the manufacture of cheese shall have an annual medical examination to indicate freedom from communicable disease.

Alberta Regulations 58/64 and 343/64 (O.C.'s 186-64 and 1146-64). Amendments to Regulations Respecting Fluid Milk. The definition of skim milk has been changed. Materials other than white wash may be used on dairy barn walls, etc., provided these surfaces can be kept clean. The responsibility for the supervision and registration of producers, producer-distributors, collectors, and milk plants supplying milk to areas under the jurisdiction of two or more local health authorities has been clarified.

Alberta Regulation 59/64 (O.C. 187-64). Amendment to Regulations Respecting Water and Ice. A new section has been inserted to control the use of chemicals in lakes, rivers, etc., to kill plants, weeds or fish by the issue of permits by the Provincial Board of Health.

Alberta Regulations 60/64 and 61/64 (O.C. 188-64). Former Regulations Respecting Swimming Pools and Bathing Places have been rescinded. These have been replaced with new Regulations Respecting Swimming Pools and new Regulations Respecting Bathing Places and Man-made Beaches. The new regulations permit greater flexibility in pool design while still providing for safety and protection of the public health. The new regulations authorize the Board to issue design and operating standards for pools. Standards have been issued in accordance with this authority.

Alberta Regulation 231/64 (O.C. 659-64). New Regulations Respecting Food and Drink, replacing former regulations. The new regulations clarify some sections of the former regulations.

Alberta Regulation 232/64 (O.C. 660-64). New Regulations Respecting Coin Operated Dry Cleaning Establishments. These regulations provide minimum standards for ventilation in premises in which coin operated dry cleaning establishments are located and also make requirements for the safe operation of machines in these establishments.

Alberta Regulation 233/64 (O.C. 661-64). Amendments to Regulations Regarding Plumbing and Drainage. The amendments clarify the definition of "plumbing system" and enlarge the list of materials which may be used in the manufacture of building sewer pipes.

Alberta Regulation 234/64 (O.C. 662-64). New Regulations Respecting Feed Lots, Pig Keeping, Fox Farms and Fur Farms. These regulations replace sections of the Regulations Respecting Nuisances and General Sanitation which formerly referred to these matters.

Alberta Regulations 256/64 and 564/64 (O.C.'s 796-64 and 1844-64). New Regulations Respecting the Use of Pesticides. These regulations provide for the licensing of persons who engage in the commercial use of pesticides.

Alberta Regulation 342/64 (O.C. 1145-64). This Order-in-Council rescinded the Provincial Board of Health Regulations Governing Cemeteries and Burial Grounds. These regulations were superseded by more complete and up-to-date regulations made under authority of The Cemeteries Act.

Alberta Regulation 387/64 (O.C. 1230-64). Amendment to Regulations Respecting Communicable Disease. The regulations now differentiate between epidemic and non-epidemic forms of ringworm.

The Board received information during the year that certain persons suffering from communicable forms of tuberculosis were refusing treatment and endangering other persons. After proper investigation in each instance 13 orders were issued covering removal of these persons to hospitals and sanatoria for treatment. This may be compared with 2 such orders in 1957, 4 in 1958, 6 in 1959, 2 in 1960, 4 in 1961, 5 in 1962 and 10 in 1963. The increase in the number of orders in 1963 and 1964 has probably been due to greater activity in case finding.

Seven persons, either Municipal Nurses or employees of the Provincial Department of Health whose duties require such authority, were appointed Executive Officers of the Provincial Board of Health during 1964. There were 20 cancellations and at the year's end 33 such authorizations were in effect.

During the year 77 nurses employed by Local Boards of Health were certified by the Provincial Board to be capable of performing inoculations and vaccinations in accordance with Section 41 of The Public Health Act. Seventy-three authorizations were returned at the year's end; 212 such authorizations were in effect compared with 208 at the end of 1963.

The Board received requests to consider the need for the installation of a sewerage system in the hamlet of Tomahawk and for the installation of waterworks and sewerage systems in the hamlet of Wabamun. These hamlets are in the Municipal District of Stony Plain, No. 84. The Board was asked to issue orders for these installations in accordance with authority provided in The Public Health Act. In each case the Municipal Council was desirous of providing the utility but in view of the provisions of The Municipal District Act, plebiscites covering the entire Municipal District for approval of a money by-law would be required unless orders were issued by the Provincial Board of Health. These requests were given careful consideration. The factors involved were different but the Board concluded in each case that while installa-

tions of the utility systems were desirable that orders to install these systems could not be fully justified on public health grounds. The Board noted that these decisions were in part based on the existing size and development of the hamlets concerned. Continued growth could affect the situation in each case.

The Board also considered problems connected with the adequacy and suitability of the water supply for the municipal system of the Village of Thorsby. The Board gave directions to the Village to ensure an adequate, suitable supply.

The Board continued its interest in matters connected with air pollution and stream pollution during the year. The Board also gave consideration to many other matters in the field of public health. These included the control of food processing and problems in collecting samples of foods, the transportation of pesticides, the labelling of containers of fluid milk, the provision of lifeguards at public swimming pools, the isolation of diphtheria carriers, and proposals for compulsory tuberculosis examinations for certain occupational groups. In these and other matters the Board gave guidance and assistance to the various Divisions of the Department of Public Health and to Local Boards of Health, so that activities could be correlated into a broad program to improve the health of the people of the Province.

LEGISLATION PASSED DURING THE YEAR

The Cemeteries Act Amendment Act (Chapter 10)

The definition of "endowment care" in section 2(e) was amended to add reference to grave stones, grave markers and monuments. The definition of "endowment care funds" in section 2(f) was amended to include reference to deposits made under the new section 28a.

A new section 3b was added which prohibits the establishment of any new commercial mausoleum of columbarium.

Sections 15a to 15d were added under the heading "Winding up of Certain Cemetery Companies" to provide a means of liquidating commercial cemetery companies that are inactive or that have no means or inadequate means of providing perpetual care of their cemeteries.

Section 26 was amended to provide that the Minister of Health may order that Part III and the new Part V are to apply to a religious or municipal cemetery where he is satisfied that the owner does not solely operate the cemetery insofar as the sale of lots, etc., is concerned.

A new section 26a was added to prohibit certain advertising practices by commercial cemetery owners.

Section 27 was amended to set out matters now dealt with in the regulations regarding the approval by the Securities Commission of forms of contracts for the sale of cemetery lots.

Section 28(1) was re-enacted to include reference to the sale of grave stones, markers, monuments.

A new section 28a was added which requires minimum amounts for endowment care funds, requirements presently found in regulations.

A new section 35a was added to require commercial cemetery owners to file certain financial information with the Securities Commission.

A new section 42a was added which will prohibit the sale, etc., of any cemetery except with the consent of the Securities Commission.

A new Part V was added entitled "Pre-need Sale of Cemetery Supplies and Services". It permits regulation of pre-need sales of grave markers, etc., by cemetery owners in a manner similar to sales regulated under The Prearranged Funeral Services Act. It applies to sales before and after April 15, 1964 and requires part of the contract consideration to be placed in trust. It only affects sales by commercial cemetery owners.

This Act came into force on April 15, 1964.

The Dental Association Act Amendment Act (Chapter 20)

Section 4 was amended by adding three subsections which contain certain additional powers of the Dental Association.

A new section 4a was added which will empower the Association to engage in dental services plans.

Section 6 was re-enacted and will permit the Association's directors to provide for their own election procedures.

Sections 7 and 36 were repealed.

Section 15 was amended to change the reference to the Dental Council of Canada to the National Dental Examining Board.

Section 20 was amended to remove the requirement that a member of the Dental Association be a Canadian citizen.

A new section 23b permits registration in the Association's Educational Register of persons doing post-graduate work.

Section 28 was amended to require graduate dentists holding public or other positions, by virtue of their qualifications as dentists, to be members of the Association and liable to pay the annual fee. A new subsection (4) was added which specifies that undergraduate students and graduate dentists undertaking internship or a study program are not contravening the Act.

Section 31, which pertains to the use of names by a dentist, was revised.

Section 41 was amended to change a reference from the University of Toronto to the University of Alberta.

Sections 48, 49, 52, 56, 57, 58 and 60, all of which pertain to matters of discipline were revised or amended with regard to certain procedural matters. The most significant change was the addition of a new section 48a which will permit summary investigation of complaints without the necessity for a formal hearing of the Association's discipline committee.

This Act came into force on July 1, 1964.

The Alberta Medical Carriers Act (Chapter 52)

Under the Alberta Medical Plan, persons who are poor insurable risks because of their health or age are entitled to obtain medical coverage from any company operating under the Plan. As a means of sharing this risk a corporation called Alberta Medical Carriers Incor-

porated was set up. The purpose of this new Act is to ensure that the benefits of the Plan will be readily available to all residents of the Province and to spread the risk fairly among all companies selling medical coverage in the Province. All companies offering medical coverage are to participate in the Plan unless exempted and all companies offering medical coverage are to participate in the risk sharing arrangements of Alberta Medical Carriers Incorporated unless exempted.

This Act came into force on March 26, 1964.

The Alberta Medical Research and Education Foundation Act (Chapter 53)

This Act created the Alberta Medical Research and Education Foundation to which donations, grants and bequests may be made for the furtherance of medical research and education.

This Act came into force on March 26, 1964.

The Mental Health Act (Chapter 54)

This new Act replaces The Mental Defectives Act and The Mental Diseases Act and deals generally with all aspects of the admission and discharge of mentally disordered persons to and from hospitals. Several alternative methods of admission are provided and review panels are established to ensure that no person is improperly kept in a hospital.

This Act will come into force on January 1, 1965.

The Nursing Aides Act Amendment Act (Chapter 64)

Section 4 (1) (b) was amended to correct the title of certain members of the advisory council.

Section 6 was amended to add to the functions of the advisory council the prescribing of the type of uniform or identifying markings that a nursing aide shall wear.

Section 7 was amended to substitute the Minister of Health for the Lieutenant Governor in Council.

This Act came into force on March 26, 1964.

The Nursing Homes Act (Chapter 65)

This is a new Act which provides for the establishment of a nursing home program for the Province and will provide for the giving of financial assistance in respect of eligible patients receiving nursing home care.

This Act came into force on April 1, 1964.

The Podiatry Act (Chapter 69)

This Act replaces The Podiatry Professions Act, R.S.A. 1955, chapter 40, which until 1959 was called The Chiropody Professions Act. The Act regulates the practice of podiatry in Alberta. The main change is to return to the Alberta Podiatry Association the power of disciplining and regulating the conduct of persons practising podiatry.

This Act came into force on March 26, 1964.

The Public Health Act Amendment Act (Chapter 72)

Section 14a was amended by adding a new subsection (8) which will permit a plebiscite on fluoridation to be taken in respect of a portion of a municipality which is supplied by its own separate water supply. Section 19(1) was re-enacted to include reference to a new town, county and municipal district.

This Act came into force on April 15, 1964.

The Solemnization of Marriage Act Amendment Act (Chapter 86)

A new section 5a was added to authorize the charging of a fee by a marriage commissioner.

This Act came into force on March 26, 1964.

The Veterinary Surgeons Act Amendment Act (Chapter 104)

Section 2 was amended by adding the definition of "animal" and "veterinary medicine".

Section 9(5) was re-enacted to provide that when the council suspends a member for default of payment of annual fees, etc., the suspension will be automatically cancelled on payment of the amount in default plus a fee of \$5.00.

Section 12(1) was amended by striking out clause (b) which requires an applicant for membership in the association to be a Canadian citizen or a person who filed a declaration of intention of becoming a Canadian citizen. As a consequence, section 13 was also repealed.

Section 18 was amended to remove certain conflicting references.

Section 21 was re-enacted and deals with certain prohibitions pertaining to the practice of veterinary medicine by persons who are not registered veterinarians.

A new section 21a was added which prohibits a corporation from operating a diagnostic or treatment service for animals as a business or in conjunction with any other business carried on by it except with the consent of the Association's council.

Section 26(1) was amended to provide that the penalty for a third or subsequent offence is to be imprisonment for a term of not more than two months.

This Act came into force on July 1, 1964.

DEPARTMENT OF PUBLIC HEALTH

 DEPARTMENT OF PUBLIC HEALTH
 REVENUE AND EXPENDITURE FOR FISCAL YEAR
 ENDING MARCH 31, 1965

	Expenditure	Revenue
2401 Administration—General	\$ 31,847.84	\$
2402 Administration—General	165,805.48	3,567.11
2405 Vital Statistics	117,244.67	163,789.49
2408 Professional Acts	1,268.42	.....
2409 Civil Service Nurse	10,203.10	.....
2410 Alcoholism Foundation of Alberta	405,000.00	.....
2411 Health Services—Extension Program	1,290,805.36	1,377,249.73
2412 Hospital Construction Grant	3,629,666.64	2,739,958.00
2453 Hospitals Division	69,828,919.49	31,972,765.57
2414 Communicable Diseases	146,982.58	.....
2415 Health Units and Grants for Public Health Services....	1,677,401.99	859,589.53
2416 Municipal Nursing Service	117,203.35	48,495.72
2417 Dental Health Services	17,912.12	.....
2418 Public Health Education	35,054.74	.....
2419 Entomology and Vector Control	23,270.18	.....
2420 Poison Control Services	7,865.17	.....
2421 Public Health Laboratories	872,000.00	1,286,907.81
2422 Social Hygiene	126,275.83	64,342.18
2425 Sanitary Engineering	251,343.61	116,097.52
2428 Industrial Health Services	34,605.16	.....
2430 Medical Services	2,323,814.96	.....
2432 Medical Care Program	2,632,731.56	.....
2433 Insulin and Other Special Drugs	47,628.60	3,473.98
2434 Emergency Air Ambulance Services	20,379.35	.....
2436 Nursing Aides	370,795.01	375,021.80
2437 Laboratory and X-Ray School	31,964.26	31,662.86
2440 Poliomyelitis	82,946.78	.....
2441 Medical Rehabilitation Services	6,446.80	.....
2442 Cerebral Palsy Clinics	146,676.28	65,570.94
2443 Arthritis Services	16,332.84	.....
2444 Multiple Handicapped Program	26,738.42	3,011.08
2450 Cancer Services	1,435,680.18	1,603,283.76
DIVISION OF TUBERCULOSIS CONTROL		
2455 Director's Office and Clinics	176,139.89	33,945.41
2456 Aberhart Memorial Sanatorium, Edmonton	1,035,630.11	185,455.94
2457 Baker Memorial Sanatorium, Calgary	1,179,096.24	401,816.28
DIVISION OF MENTAL HEALTH		
2460 Director's Office and Guidance Clinics	390,911.33	151,600.33
2463 Provincial Mental Hospital, Ponoka	2,799,152.71	518,639.77
2465 Provincial Mental Institute, Edmonton	3,062,787.33	662,544.64
2467 Rosehaven, Camrose	827,255.08	366,859.69
2468 Provincial Mental Hospital, Claresholm	454,767.64	89,958.38
2469 Provincial Auxiliary Mental Hospital, Raymond	147,324.25	39,812.85
2472 Emotionally Disturbed Children's Program	80,144.56	9,278.50
2475 Provincial Training School, Red Deer	2,165,187.05	440,556.42
2477 Deerhome, Red Deer	2,133,871.68	362,083.77
	<u>\$100,385,078.64</u>	<u>\$ 43,977,339.06</u>
Total Expenditure—Public Health Department		\$100,385,078.64
Less Public Health Revenue		43,977,339.06
Net Expenditure—Department of Public Health		<u>\$ 56,407,739.58</u>

Vital Statistics

The Vital registrations during the year were as follows:

Births	36,173
Marriages	10,634
Deaths	9,482

The population for 1964 was 1,432,000 and, therefore, the following rates have been recorded:

Year	No. of Births	Birth Rate	No. of Marriages	Marriage Rate	No. of Deaths	Death Rate
1959	38,080	30.6	10,402	8.4	8,481	6.8
1960	39,009	30.4	10,482	8.2	8,888	6.9
1961	38,914	29.2	10,474	7.9	8,863	6.7
1962	38,804	28.3	10,423	7.6	9,264	6.8
1963	38,467	27.4	10,163	7.2	9,444	6.7
1964	36,173	25.3	10,634	7.4	9,482	6.6

On the whole these figures are good. The birth rate has continued to decrease. The natural increase (excess of births over deaths) was 26,691.

Alcoholism

The Alcoholism Foundation of Alberta is a voluntary society supported during the fiscal year 1964-65 by the Province of Alberta by a grant of \$405,000.00. The Foundation recognizes alcoholism as a treatable illness and a public health responsibility and is, therefore, concerned with problem drinking. Its aim is to prevent problem drinking through education, treatment and research. In carrying out this program, 931 new files were established in 1964, bringing the total of alcoholics known to the Foundation in eleven years of operation to 8,109. 78% of these alcoholics have received treatment and it is conservatively estimated that 54% have "recovered" or shown significant improvement.

Communicable Diseases

There was only one case of poliomyelitis in 1964 with no death. The incidence of measles was fairly high with 7,860 cases reported, with 9 deaths and a mortality rate of 0.6. There is a very great need of a safe vaccine to provide immunity during the first few years of life.

Health Units

There were some changes in Health Units during 1964. Big Country Health Unit was enlarged by the inclusion of the Municipal District of Acadia. By the end of 1964 the Town of Bowness was removed from the Mount View Health Unit and added to the City of Calgary. The Town of Jasper Place was also amalgamated with the City of Edmonton.

Public Health Nursing

There has been a gradual increase in the amount of nursing services provided in the Health Units during 1964. There was also a marked decrease over the last number of years in the operation of Municipal Nursing Services with a reduction from 30 in 1958 to 16 in 1964.

Maternal and Child Health

There was a wider use of the maternal and newborn nursing service provided throughout the Province during the year with many Health Units taking advantage of services from the Nursing Consultant in relation to prenatal classes and advice on maternal and infant care.

Dental Health Services

Dental service was increased during the year by a gradual increase in employment of dentists in the Health Units and a distribution of dental auxiliaries in many of the Health Units functioning under a full-time dental officer or part-time dentist.

Thalidomide Program

The thalidomide program for the care of children deformed prenatally continues to progress. There has been considerable difficulty in obtaining adequate prosthetic services for these small children.

Alberta Medical Plan

Although the Alberta Medical Plan was implemented in October, 1963, it was not until well on into 1964 that the number obtaining coverage under the plan increased greatly. The program was comprehensive, providing one level of medical benefits under a basic contract. Physicians' services, laboratory services and diagnostic aids in and out of hospital are provided. Residents not liable to pay any federal income tax receive a 50% subsidy and people paying income tax up to \$500.00 receive a 25% subsidy in the paying of contract premiums.

Registry for Handicapped Children and Adults

This program which was implemented in September, 1963, has progressed very well. It is being continued with the ultimate object of registering all handicapped persons in the Province. Health Units have supported this plan wholeheartedly, and Vital Statistics provide a record of abnormal births through Notification of Live Births and Stillbirths. Voluntary organizations and the medical profession have also cooperated. Approximately 7,000 persons have been registered up to December 31st, 1964.

Diabetic Drug Program

The program of providing hypoglycemic drugs under the program is continuing under a means test. The provision of insulin and tolbutamide is continuing with a combination of these drugs also being added to the list. 374 persons received insulin, 478 persons received tolbutamide and 65 persons received phenformin in 1964.

Phenylketonuria Therapy Program

Since the commencement of this program in 1960, 13 children have received the benefits of this program, while 10 are still being actively treated.

Rheumatic Fever Prophylaxis

This program providing penicillin on a daily dose for the prevention of further attacks of rheumatic fever has continued since 1958. To the end of 1964 there have been 2,637 children in receipt of penicillin with a total of 3,991 separate supplies provided.

Emergency Air Ambulance

This emergency ambulance service has been in operation for six years. During 1964 there were 96 flights provided. This has now developed into a very valuable service to the people in outlying areas being the basis of saving many lives.

Poliomyelitis Treatment Program

This service has since its inception provided post-acute hospitalization care for poliomyelitis cases, as well as respirators, orthopaedic appliances, out-patient physiotherapy and necessary assessment procedures. The total expenditure under this program during 1964 was \$82,552.00 with a gradual decrease as the number of poliomyelitis cases have decreased.

Treatment Services for Social Service Recipients

The number of Social Service Recipients receiving benefits under the program has gradually increased over the years since 1947, the total number of recipients in 1964 being 67,880 as compared to 63,022 in 1963. There was a total expenditure for this group of \$2,211,000.00 in 1964. The service included medical care, dental care, optical and optometric services, chiropractic, physiotherapy and podiatry services.

School for Nursing Aides

The School for Nursing Aides continued to operate at almost maximum capacity with a continued increase in the demand for these graduates in our active treatment and auxiliary hospitals. There has been a total of 5,339 graduates since the first graduate was turned out in 1946.

Nursing Recruitment Program

The recruitment program for nursing personnel has continued to be of great assistance in enrolling student nurses and nursing aides in our schools throughout Alberta. The program is very active under the direction of the Recruitment Officer.

Laboratory and X-Ray School

This school opened in 1954 providing x-ray and clinical laboratory training for recent graduates from high school. The school serves over the years to provide combined x-ray and laboratory technicians for our smaller acute hospitals in Alberta. The program was enlarged in 1962 whereby the students were trained further in a number of biochemical procedures that could be utilized to advantage in a small hospital.

Cystic Fibrosis

In 1964 a new benefit was introduced whereby antibiotic drugs and pancreatic enzyme were provided to children suffering from cystic fibrosis, on condition that the patient's doctor applied for this benefit. As of December 31st, 1964, 57 children were receiving these drugs at a total expenditure of \$3,579.00. This disease is a condition not recognized until recent years and when first identified numbered only 46.

Juvenile Amputee Clinic

This clinic superseded the previously named Special Handicapped (Thalidomide Type) Infants' Program. The six children initially receiving benefits continued to do so. Any child up to its eighteenth birthday suffering from an amputation, congenital or traumatic, may be examined and where indicated provided with a prosthetic device. 34 children have been examined in 1964 and prosthetic devices to a cost of \$7,000.00 were provided.

Cancer Clinics

There has been a considerable increase in the number of new cases referred to the cancer clinic in Lethbridge, while the Edmonton and Calgary clinics have experienced a busy year during 1964. The total number of examinations made in Edmonton, Calgary and Lethbridge during 1964 was 30,944 as compared to 29,439 in 1963. New

malignant cases reporting in Edmonton in 1964 were 1,656, new malignant cases reporting in Calgary in 1964 were 1,049 and new malignant cases reporting in Lethbridge in 1964 were 225.

Social Hygiene

During 1964 there was a heartening downward trend in reported cases of both syphilis and gonorrhoea, with 110 new cases of syphilis, of which 83 were of the early infectious type. With gonorrhoea, there has been a slight improvement with 3,953 cases reported in 1964 as compared to 4,096 in 1963.

Provincial Laboratories

The Provincial Laboratories carried out 1,049,004 examinations in 1964 as compared to 949,664 in 1963, which was an increase of about 10%. The planned new wing to the Provincial Laboratory in Edmonton will provide a considerable enlargement of the laboratory program and space to be utilized.

There is a considerable increase in the cytology smear service offered by the Calgary and Edmonton laboratories. There were 6,572 cervical smears examined in Calgary in 1964, which is a 43% increase over 1963, and 32,795 in Edmonton, a 64% increase.

A technical development which holds promise for the future is the use of the electron microscope to disease investigation.

In 1963 there was a significant problem relative to virulent strains of *C. diphtheriae* while only four strains were isolated in Calgary, as compared to over 70 in 1963. Edmonton recorded 80 isolations in 1964, a decrease of only five from 1963. The incidence of Salmonellosis has remained high but somewhat static.

Tuberculosis Control

There definitely has been an improvement in the situation relating to new tuberculosis cases with only 763 appearing against 854 being recorded in 1963. There were 26 fewer active cases diagnosed in 1964, which is a decrease of 7.6% compared to 1963.

There is an area of northern Alberta in which definite difficulties arise relative to the screening of cases. These areas are not contiguous to populated centres but are in scattered outlying areas. There are also heavily populated areas in our two main cities housing some of our older people which are difficult to reach with our present screening programs. Our doctors throughout the Province are cooperative in referring suspected cases to our clinics for follow-up.

Sanitary Engineering

Sanitary inspection in areas not included in Health Units has received considerable attention during the year. Specialized inspection of swimming pools is a very important area in the field of sanitation. Careful checking of radiation hazards plays an important part in our sanitary engineering program.

Air and water pollution has been given considerable attention in relation to our cities, and larger rivers, as well as oilfields. Air monitoring in the Cities of Edmonton and Calgary was continued. Pollution con-

trol laboratories have been operated extensively. Sewage pond studies have been continued. The design standards for incinerators which were set up in 1963 received careful revision in 1964 with the purpose of finalization by 1965.

Fluoridation of water supplies continued to grow slowly during the year but very much slower than might have been expected if a two-thirds majority vote was not required in order to implement the program in each of the organized municipal water systems.

Industrial Health

This Division became more active in 1964. Regulations relating to the control of pesticides were written. A short course on the use of pesticides was given for health inspectors and county and municipal supervisors. A number of industrial plants were studied as to noise levels, which indicated that considerable study in this area was needed in the future. A Chief Industrial Chemist joined the Division in the middle of the year. Preliminary study was given to many plants relative to mists, vapours, fumes, gases and toxic dusts, which is followed-up in many cases by lung function tests of the workers. A significant number of these cases indicated impairment of lung function.

Mental Health

In this area, community services are provided by the Provincial Guidance Clinics. The small unit for the care of the emotionally disturbed child continued to be much utilized. Deerhome, for adult retarded individuals, continued to grow. There was another unit added for the training and education of the mentally retarded child.

Over several years, there has been a program of rewriting the Mental Health Act with the object of modernizing the program under this Act. It was planned to rescind The Mental Defectives Act with the purpose of incorporation with The Mental Health Act. It is expected to submit the new Mental Health Bill to the next legislature for enactment. This will, we anticipate, provide a more open-door approach to the admission of mental cases to our institutions.

Bursary assistance was given for continued education for many staff members in the disciplines of psychiatry, psychology and social work. A number of medical men obtained their fellowship in psychiatry as a result of this. Doctorate degrees in psychology were also provided with bursary assistance.

The capacity of the various mental institutions and the number of patients as at December 31st, 1964, was as follows:

	Capacity	Patients in
ACUTE MENTAL HOSPITALS		
P.M.H., Ponoka	1,272	1,100
P.M.I., Edmonton	1,308	1,409
CHRONIC MENTAL HOSPITALS		
Rosehaven, Camrose	510	500
P.M.H., Claresholm	424	237
P.A.M.H., Raymond	127	116
INSTITUTIONS FOR MENTAL DEFECTIVES		
P.T.S., Red Deer	882	869
Deerhome, Red Deer	1,020	974
EMOTIONALLY DISTURBED CHILDREN'S UNITS		
Linden House, Red Deer	25	19
Total	<u>5,568</u>	<u>5,224</u>

The new reception-administration building at the Provincial Mental Hospital, Ponoka, was completed and occupied. This permitted the closing of one of the older buildings and the emptying of another older building to undergo renovation. Approximately 203 patients were transferred from the Provincial Mental Institute, Edmonton, and from the Provincial Mental Hospital, Ponoka, to other institutions within the Division.

The construction of a new administration building at the Provincial Mental Hospital, Claresholm, a new services building and a new infirmary unit at the Provincial Training School, Red Deer, as well as two new units at Deerhome, Red Deer, were commenced. An additional 29 beds were occupied in the paediatric unit at the Baker Memorial Sanatorium.

Because of illness of its members, the Visiting Board became inactive.

Hospital Services

For information regarding the Alberta hospitalization program, it will be necessary to refer to the 1964 Annual Report issued by the Hospitals Division.

Professional Acts

In regard to the subject of Professional Acts, the Minister of Health is charged with the administration of the following:

- The Chiropractic Act
- The Dental Association Act
- The Medical Profession Act
- The Naturopathy Act
- The Optometry Act
- The Alberta Pharmaceutical Association Act
- The Chartered Physiotherapists Act
- The Podiatry Act
- The Veterinary Surgeons Act
- The Psychologists Association Act

With reference to The Podiatry Act and The Optometry Act, Boards of Examiners have been established by the Department in order to license all members who desire to practise in Alberta. Pursuant to The Chiropractic Act and The Naturopathy Act, Appraisal Boards have been formed by the Department of Health in order that members wishing to practise in Alberta may be "listed" through the Provincial Government. With regard to the other Professional Acts, membership is obtained through the various Associations established under each respective Act.

During the calendar year 1964, the Chiropractic Appraisal Board approved thirteen applications and rejected one. The Board of Examiners pertaining to The Optometry Act issued four licenses. The Naturopathy Appraisal Board reviewed and approved one application, while no applications were received pursuant to The Podiatry Act.

Respectfully submitted,

M. G. McCallum, B.Sc., M.D., D.P.H.
Deputy Minister of Health.

DIVISION OF LOCAL HEALTH SERVICES

E. S. O. Smith, M.A., M.B., B.Chir., D.P.H., D.I.H., Director

The Division of Local Health Services constitutes the Department's principal link with local Boards of Health. It consists of the following branches, each with its own director and each with its own appropriation of public funds:

- (1) Communicable Diseases
- (2) Health Units
- (3) Public Health Nursing, including Maternal and Child Health
- (4) Dental Health
- (5) Health Education, including Nutrition Services
- (6) Entomology and Vector Control
- (7) Poison Control Services

The Communicable Diseases branch and the Health Units branch are under the immediate supervision of the Director of Local Health Services. Similarly, Poison Control Services are supervised by the Director of Entomology and Vector Control. Within the Public Health Nursing branch there is a Nursing Consultant in Maternal and Child Health, and within the Health Education branch there is a Nutrition Consultant.

The Division of Local Health Services advises local Boards of Health on matters pertaining to administration, and is the agency through which grants from the Department are paid to City Health Departments, Health Units and Municipal Nursing Services.

Each director or consultant within the Division of Local Health Services is available to serve in a consulting capacity to Medical Officers of Health and senior members of their staffs, and each one maintains close liaison with other divisions of the Department, other departments of the Provincial Government, and professional colleagues such as his or her opposite number in the Department of National Health and Welfare and his or her counterpart at the University of Alberta.

During 1964 the Director of Local Health Services had the privilege of presenting his views on the organization and administration of local health services to the Public Expenditure and Revenue (Budget) Study Committee under the chairmanship of the Provincial Treasurer.

The Director of Local Health Services attended the third meeting of the Advisory Committee on Epidemiology in Ottawa from the 5th to the 7th February, 1964, the seventh annual meeting of the Maternal and Child Health Advisory Committee in Ottawa on the 14th and 15th September, 1964, and the fourth meeting of the Advisory Committee on Epidemiology in Ottawa from the 30th September to the 2nd October, 1964.

The Director of Public Health Nursing, the Director of Local Health Services and the Director of Health Education were elected as President, Vice-President and Secretary respectively of the Alberta Division of the Canadian Public Health Association at its annual meeting in Calgary from the 1st to 3rd April, 1964. These three persons had the opportunity of attending the 55th annual meeting of the Canadian Public Health Association in Moncton, New Brunswick, from the 1st to the 4th June, 1964, at which the Director of Local Health Services was elected to his second term as Vice-President of the Association, and at which members of the Division of Local Health Services were elected to chair the Dental Public Health Section, the Health Education Section, the Maternal and Child Health Section and the Public Health Nutrition Section during the ensuing year.

Three members of the Division of Local Health Services were selected to participate in an Emergency Public Health Services Planning and Operations course at the Canadian Civil Defence College, Arnprior, Ontario, from the 16th to the 20th November, 1964.

The functions of the various branches of the Division of Local Health Services, and their activities during the year, are described in more detail in the reports which follow.

COMMUNICABLE DISEASES

E. S. O. Smith, M.A., M.B., B.Chir., D.P.H., D.I.H., Director

The Communicable Diseases branch of the Division of Local Health Services is responsible for:

- (1) the collection, preparation and transmission of information, and the compilation and evaluation of statistics, concerning the morbidity and mortality of communicable diseases;
- (2) the provision of consultant services to local health authorities on matters relating to the prevention and control of communicable diseases;
- (3) the direction or application of control measures against communicable diseases in areas administered by the Provincial Government which are outside the jurisdiction of Health Units;
- (4) the interpretation and distribution of Communicable Disease Regulations;
- (5) the distribution of immunizing antigens and sera, and supervision of the utilization of those in limited supply;
- (6) the appraisal of immunization programs, and the publication of specific recommendations in relation to them.

COMMUNICABLE DISEASE REGULATIONS

During 1964 the Communicable Disease Regulations were amended to provide for recognition of the distinction between epidemic and non-epidemic ringworm. Ringworm caused by organisms other than *Microsporum audouini*, *Trichophyton tonsurans*, *Trichophyton violaceum* and *Trichophyton schoenleinii* was designated as non-epidemic. The purpose of the amendment was to enable children with non-epidemic ringworm to return to school as soon as they come under treatment by a physician.

PARALYTIC POLIOMYELITIS

There was only one reported case of paralytic poliomyelitis in 1964, the lowest number on record, and there was no fatality. By way of comparison, there were six cases with no fatality in 1962, and two cases with one death in 1963. The patient was a 44-year-old man who had never been immunized, and the causative organism was identified as poliovirus type 3. He suffered only a mild paresis, and had no residual disability.

VIRAL OR ASEPTIC MENINGITIS

There were 36 reported cases of viral or aseptic meningitis in 1964, and there was one death which occurred in a 42-year-old man. The corresponding figures in the two preceding years were 53 cases with no fatality in 1962, and 42 cases with one death in 1963. Poliovirus type 3 was identified in one case, Coxsackie viruses were identified in 12 cases (nine type A23, one type A unspecified and two type unspecified), and ECHO viruses were identified in 8 cases (four type 2, three type 6 and one type 14). The aetiology of the remaining 15 cases, including the fatal case, was undetermined.

TYPHOID FEVER

There were four reported cases of typhoid fever in 1964, compared with eight cases in 1962 and two cases in 1963. There was no fatality in any of these years. Two of the cases were from Edmonton; in one of these, a 22-year-old woman, infection was attributable to a carrier state in the mother-in-law who was on a visit from West Germany; in the other case, a 15-year-old boy, infection was attributable to the ingestion of water from a golf course sprinkler system whose source was the North Saskatchewan River.

DIPHTHERIA

There was only one reported case of diphtheria in 1964, the lowest number on record, and there was no fatality. These figures compared favourably with ten cases and no fatality reported in 1962, and with 29 cases and three deaths reported in 1963.

However, there were also 92 diphtheria carriers reported during the year, compared with 23 in 1962 and 171 in 1963. The continuing prevalence of carriers serves as a reminder that diphtheria is still endemic in Alberta, and allows no room for complacency in the public attitude towards immunization.

MEASLES

The number of measles cases reported during 1964 was 7,860, compared with 10,185 cases in 1962 and 8,535 cases in 1963. The number of deaths from measles was nine, compared with five in 1962 and ten in 1963.

The mortality rate of measles has exceeded that of poliomyelitis every year for the last four years, and there is an undeniable need for an immunization program to give protection against measles during the first few years of life. It is hoped that some guidance on the choice of a suitable vaccine for public health use may soon be forthcoming from the National Advisory Committee on Immunizing Agents.

STREPTOCOCCAL INFECTIONS

The number of reported cases of scarlet fever and streptococcal sore throat in 1964 was 1,601, compared with 1,235 cases in 1962 and 1,153 cases in 1963. There was no fatality in any of these years.

While streptococcal infections may not always be readily preventable, there is no doubt that their sequelae often can be prevented. In particular, it is considered that many first attacks of rheumatic fever could be prevented if the streptococcal infections which usually precede them were recognized and more adequately treated. Streptococcal infections are the underlying cause of much chronic morbidity, and their importance should not be underestimated.

INFECTIOUS HEPATITIS

The number of cases of infectious hepatitis reported during 1964 was 1,299, compared with 1,726 cases in 1962 and 1,300 cases in 1963. The number of deaths from infectious hepatitis was five, compared with five in 1962 and ten in 1963.

IMMUNIZATION

Sabin trivalent oral poliovirus vaccine was made available at the regular immunization clinics of City Health Departments and Health Units between the beginning of January and the end of April to persons who had completed a series of Salk vaccine inoculations at least one month previously. Two doses at an interval of not less than six weeks were offered to those who had not received the oral vaccine before, and a second dose was offered to those who had received only one dose in 1963. No reinforcing dose was offered to those who had already received two doses. Post-vaccination surveillance was continued until the end of June, but no significant reactions were reported. An analysis of eligibility for and acceptance of Sabin vaccine in relation to the 1964 program is shown in Table 1.

With the assistance of the Provincial Laboratory of Public Health, immunizing antigens and sera to the value of approximately \$172,000 were distributed during 1964. The corresponding expenditures for the two preceding years were \$201,000 in 1962 and \$196,000 in 1963.

TABLE 1—TABLE SHOWING ELIGIBILITY FOR AND ACCEPTANCE OF SABIN VACCINE IN RELATION TO 1964 PROGRAM

Category	Estimated Population	Number Eligible for One Dose Only on 1st Jan. 1964 of Sabin Vaccine	Number Eligible for Two Doses on 1st Jan. 1964 of Sabin Vaccine	Fed 1st Dose of Sabin Vaccine during 1964 Program		Fed 2nd Dose of Sabin Vaccine during 1964 Program				Total
				Number	Percentage of Eligibles	After 1st Dose in 1963 or Earlier		After 1st Dose in 1964		
						Number	Percentage of Eligibles	Number	Percentage of Eligibles	
Pre-school children	218,988	29,613	107,123	25,843	24.1	11,029	37.2	14,847	57.5	25,876
School children	333,327	25,958	46,616	36,346	78.0	21,142	81.4	29,445	81.0	50,587
Adult males	399,831	28,078	87,802	8,886	10.1	5,965	21.2	5,142	57.9	11,107
Adult females	407,854	36,889	110,814	15,612	14.1	9,370	25.4	9,764	62.5	19,134
Total	1,360,000	120,538	352,355	86,687	24.6	47,506	39.4	59,198	68.2	106,704

TABLE 2
NUMBER OF CASES OF COMMUNICABLE DISEASES REPORTED IN THE YEARS
1963 AND 1964

	1963	1964
Brucellosis	6	2
Diarrhoea of the newborn	10	8
Diphtheria	29	1
Dysentery:		
(a) Amoebic	1	....
(b) Bacillary	309	235
(c) Unspecified	5	16
Encephalitis, infectious	6	1
Food poisoning:		
(a) Staphylococcus intoxication .....	....	9
(b) Salmonella infections	115	80
(c) Unspecified	4	5
Hepatitis, infectious	1,300	1,299
Measles	8,535	7,860
Meningitis, viral or aseptic:		
(a) Due to poliovirus	1	1
(b) Due to Coxsackie	13	12
(c) Due to ECHO virus .....	....	8
(d) Other and unspecified	28	15
Meningococcal infections	12	5
Paratyphoid fever	5	4
Pemphigus neonatorum .....	....	....
Pertussis	954	281
Poliomyelitis, paralytic	2	1
Psittacosis .....	....	....
Puerperal pyrexia	3	4
Rubella	1,912	12,678
Scarlet fever and streptococcal sore throat	1,153	1,601
Tuberculosis:		
(a) Pulmonary	335	290
(b) Other and unspecified	86	81
Tularaemia .....	....	1
Typhoid fever	2	4

TABLE 3
DEATHS ASCRIBED TO COMMUNICABLE DISEASES FOR THE YEARS 1963 AND 1964

	1963		1964	
	Total Deaths	Rate per 100,000 of population	Total Deaths	Rate per 100,000 of population
Brucellosis	0	0.0	0	0.0
Diarrhoea of the newborn	3	0.2	1	0.1
Diphtheria	3	0.2	0	0.0
Dysentery	0	0.0	0	0.0
Encephalitis	4	0.3	3	0.2
Hepatitis, infectious	10	0.7	5	0.4
Measles	10	0.7	9	0.6
Meningococcal infections	2	0.1	3	0.2
Paratyphoid fever	0	0.0	0	0.0
Pertussis	2	0.1	3	0.2
Poliomyelitis, paralytic	1	0.1	0	0.0
Scarlet fever and streptococcal sore throat	0	0.0	0	0.0
Smallpox	0	0.0	0	0.0
Tuberculosis:				
(a) Pulmonary	30	2.1	26	1.9
(b) Other and unspecified	7	0.5	4	0.3
Typhoid fever	0	0.0	0	0.0
Population of Alberta in 1963 1,405,000			Population of Alberta in 1964 1,432,000	

TABLE 6—COMMUNICABLE DISEASE CASES REPORTED IN 1964 BY SEX, AGE AND PERIOD OF REPORTING

	SEX		FOUR WEEKLY PERIODS										AGES							Cases In Armed Forces	TOTAL						
	Male	Female	1 - 4	5 - 8	9 - 12	13 - 16	17 - 20	21 - 24	25 - 28	29 - 32	33 - 36	37 - 40	41 - 44	45 - 48	49 - 52	53	Under 1	1 - 4	5 - 9			10 - 14	15 - 19	20 - 39	40 - 59	60 and Over	Age Not Stated
			BRUCELLOSIS																								
Edmonton																											
Calgary																											
Lethbridge																											
Medicine Hat																											
Red Deer		2	1								1										1		1				
Rural																											
Total		2	1								1										1		1				2
DIARRHOEA OF THE NEWBORN																											
Edmonton	1							1											1								1
Calgary																											
Lethbridge																											
Medicine Hat																											
Red Deer	4	3	3								1	1					2	7									7
Rural																											
Total	5	3	3					1			1	1					2	8									8
DIPHTHERIA																											
Edmonton																											
Calgary																											
Lethbridge																											
Medicine Hat																											
Red Deer	1							1																1			1
Rural																											
Total	1							1																1			1

TABLE 6—COMMUNICABLE DISEASE CASES REPORTED IN 1964 BY SEX, AGE AND PERIOD OF REPORTING (Continued)

	SEX		FOUR WEEKLY PERIODS										AGES								Cases In Armed Forces	TOTAL				
	Male	Female																								
			1 - 4	5 - 8	9 - 12	13 - 16	17 - 20	21 - 24	25 - 28	29 - 32	33 - 36	37 - 40	41 - 44	45 - 48	49 - 52	53	Under 1	1 - 4	5 - 9	10 - 14			15 - 19	20 - 39	40 - 59	60 and Over	Age Not Stated
DIPHTHERIA CARRIER-STATE																										
Edmonton	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Calgary	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lethbridge	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Medicine Hat	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Red Deer	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rural	49	43	4	30	22	16	3	...	...	...	...	3	4	5	5	...	8	19	32	25	3	3	1	1	...	
Total	49	43	4	30	22	16	3	...	...	...	...	3	4	5	5	...	8	19	32	25	3	3	1	1	...	
DYSENTERY—BACILLARY																										
Edmonton	4	6	1	...	...	...	...	7	1	...	...	...	1	...	...	...	1	4	1	2	...	2	1	...	...	10
Calgary	1	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	2
Lethbridge	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Medicine Hat	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Red Deer	18	12	5	3	3	2	4	...	...	...	...	5	1	1	2	...	3	6	9	10	1	1	6	4	...	30
Rural	77	116	17	12	24	15	20	5	18	23	8	9	19	12	9	2	39	86	17	15	10	16	...	...	...	193
Total	100	135	23	15	27	17	31	10	18	24	9	15	20	13	11	2	43	97	27	27	11	19	7	4	...	235
DYSENTERY—UNSPECIFIED																										
Edmonton	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Calgary	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lethbridge	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Medicine Hat	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Red Deer	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rural	5	11	...	9	1	...	...	1	3	...	1	...	...	...	1	...	4	6	2	1	1	...	2	...	...	16
Total	5	11	...	9	1	...	...	1	3	...	1	...	...	...	1	...	4	6	2	1	1	...	2	...	...	16

TABLE 6—COMMUNICABLE DISEASE CASES REPORTED IN 1964 BY SEX, AGE AND PERIOD OF REPORTING (Continued)

	SEX		FOUR WEEKLY PERIODS										AGES						Cases In Armed Forces	TOTAL							
	Male	Female	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40	41-44	45-48	49-52	53	Under 1	1-4			5-9	10-14	15-19	20-39	40-59	60 and Over	Age Not Stated
HEPATITIS, INFECTIOUS																											
Edmonton	56	50	12	13	11	13	5	5	8	5	7	8	8	4	7	3	1	8	24	16	14	34	7	2	...	106	
Calgary	63	61	19	7	10	7	9	10	3	3	7	11	10	13	12	3	...	8	24	19	13	46	12	2	...	124	
Lethbridge	5	7	1	...	...	3	1	1	1	...	...	2	2	2	...	...	...	2	3	2	1	2	3	1	...	12
Medicine Hat	17	22	1	1	...	...	1	4	1	...	1	3	1	3	13	3	...	2	10	4	7	12	4	...	39	
Red Deer	64	34	4	6	9	20	2	1	20	19	6	2	3	1	2	3	...	1	22	28	20	20	7	...	98		
Rural	480	440	71	108	91	58	69	74	61	64	62	47	42	51	102	20	1	49	248	150	79	300	69	24	...	920	
Total	685	614	108	135	121	101	87	94	94	98	83	73	66	74	136	29	2	68	331	219	134	414	102	29	...	1,299	
MEASLES																											
Edmonton	1,296	1,279	889	511	397	266	182	104	56	10	3	21	38	45	47	6	81	1,013	1,314	117	24	22	4	...	...	2,575
Calgary	499	536	54	129	99	152	74	86	68	44	14	26	27	88	145	29	19	306	580	91	20	18	1	...	...	1,035
Lethbridge	58	63	...	2	...	1	6	...	1	1	4	1	4	15	60	26	1	39	81	...	...	...	...	...	...	121
Medicine Hat	17	11	3	...	4	5	2	1	2	1	...	1	1	5	3	...	1	12	11	4	...	...	...	...	...	28
Red Deer	122	103	67	80	31	10	2	3	...	6	1	2	10	7	5	1	4	47	107	54	13	...	...	...	...	225
Rural	1,915	1,961	486	627	500	451	368	451	317	145	43	77	116	178	71	46	185	1,415	1,917	250	38	64	6	1	...	3,876	
Total	3,907	3,953	1,499	1,349	1,031	885	634	645	444	207	65	128	196	338	331	108	291	2,832	4,010	516	95	104	11	1	...	7,860	
MENINGITIS, VIRAL OR ASEPTIC—DUE TO POLIOVIRUS																											
Edmonton	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
Calgary	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lethbridge	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Medicine Hat	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Red Deer	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rural	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1

TABLE 6—COMMUNICABLE DISEASE CASES REPORTED IN 1964 BY SEX, AGE AND PERIOD OF REPORTING (Continued)

	SEX		FOUR WEEKLY PERIODS												AGES							Cases In Armed Forces	TOTAL					
	Male	Female																										
			1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40	41-44	45-48	49-52	53	Under 1	1-4	5-9	10-14	15-19			20-39	40-59	60 and Over	Age Not Stated	
PARATYPHOID FEVER																												
Edmonton	1						1																		1			1
Calgary																												2
Lethbridge	1	1		1										1										1				
Medicine Hat																												1
Red Deer																												
Rural	1													1														
Total	3	1		1			1							1				1						1				4
PARATYPHOID CARRIERS																												
Edmonton																												
Calgary																												
Lethbridge																												
Medicine Hat																												
Red Deer																												
Rural	1												1											1				1
Total	1												1											1				1
PERTUSSIS																												
Edmonton	22	24		6	3			2		1	5	11	3	13			10	14	11	8	2	1						46
Calgary	58	81		10	10	11	12	12	14	10	5	16	4	5	5	3	13	28	65	28	4	1						139
Lethbridge	1	3		2			1	1										1	2	1								4
Medicine Hat	13	10	2	4	8	1	4	1			1		1	1			4	14	4				1					23
Red Deer	1								1								1											1
Rural	38	30	8	6	2	7	7	7	2		7	9	1	7	4	1	14	26	21	7								68
Total	133	148	33	28	23	19	26	22	17	11	18	36	9	26	9	4	42	83	103	44	6	2	1					281

POLIOMYELITIS—PARALYTIC

[illegible]

PUERPERAL PYREXIA

[illegible]

RUBELLA

Edmonton	1,768	2,007	122	294	444	354	767	891	542	79	42	45	37	64	75	19	73	575	1,890	902	210	114	11	3,775
Calgary	1,455	1,538	256	515	947	342	262	190	133	33	26	45	44	96	93	11	52	344	1,514	852	121	105	5	2,993
Lethbridge	197	99	4	3	16	39	43	141	7	1	9	9	15	3	6	3	10	30	176	67	2	11	1	296
Medicine Hat	105	125	14	28	41	52	49	20	1	1	1	4	7	6	6	1	6	30	118	46	9	20	1	230
Red Deer	140	155	8	57	68	50	58	20	15	7	2	3	3	1	2	1	10	44	166	42	17	14	2	295
Rural	2,372	2,717	367	608	987	765	760	764	356	74	44	56	57	85	151	15	174	807	2,472	1,165	226	219	25	5,089
Total	6,037	6,641	767	1,506	2,490	1,579	1,935	1,928	1,188	201	122	162	163	255	333	49	325	1,830	6,336	3,074	585	483	44	12,678

SCARLET FEVER AND STREPTOCOCCAL SORE THROAT

[illegible]

TABLE 7

INCIDENCE OF SOME OF THE MORE SERIOUS COMMUNICABLE DISEASES
FOR THE TEN-YEAR PERIOD, 1955 to 1964

Date	Population	Total Cases	Total Deaths	Mortality Rate per 100,000 of population
DIPHTHERIA				
1955	1,066,000	10	1	0.1
1956	1,123,116	19	0	0.0
1957	1,160,000	39	6	0.5
1958	1,201,000	17	2	0.2
1959	1,243,000	10	0	0.0
1960	1,283,000	12	1	0.1
1961	1,331,944	19	0	0.0
1962	1,370,000	10	0	0.0
1963	1,405,000	29	3	0.2
1964	1,432,000	1	0	0.0
MEASLES				
1955	1,066,000	7,136	24	2.3
1956	1,123,116	2,047	2	0.2
1957	1,160,000	12,337	16	1.4
1958	1,201,000	3,383	4	0.3
1959	1,243,000	3,956	3	0.2
1960	1,283,000	9,279	6	0.5
1961	1,331,944	6,309	4	0.3
1962	1,370,000	10,185	5	0.4
1963	1,405,000	8,535	10	0.7
1964	1,432,000	7,860	9	0.6
PERTUSSIS				
1955	1,066,000	791	1	0.1
1956	1,123,116	547	3	0.3
1957	1,160,000	889	4	0.3
1958	1,201,000	684	2	0.2
1959	1,243,000	657	5	0.4
1960	1,283,000	580	3	0.2
1961	1,331,944	315	1	0.1
1962	1,370,000	980	1	0.1
1963	1,405,000	954	2	0.1
1964	1,432,000	281	3	0.2
POLIOMYELITIS, PARALYTIC				
1955	1,066,000	125	8	0.7
1956	1,123,116	39	3	0.3
1957	1,160,000	34	6	0.5
1958	1,201,000	22	1	0.1
1959	1,243,000	84	13	1.0
1960	1,283,000	201	11	0.9
1961	1,331,944	26	2	0.2
1962	1,370,000	6	0	0.0
1963	1,405,000	2	1	0.1
1964	1,432,000	1	0	0.0
SCARLET FEVER AND STREPTOCOCCAL SORE THROAT				
1955	1,066,000	741	1	0.1
1956	1,123,116	642	0	0.0
1957	1,160,000	774	1	0.1
1958	1,201,000	1,062	0	0.0
1959	1,243,000	5,132	5	0.4
1960	1,283,000	4,131	1	0.1
1961	1,331,944	1,673	2	0.2
1962	1,370,000	1,235	0	0.0
1963	1,405,000	1,153	0	0.0
1964	1,432,000	1,601	0	0.0
TYPHOID FEVER				
1955	1,066,000	8	2	0.2
1956	1,123,116	22	1	0.1
1957	1,160,000	16	2	0.2
1958	1,201,000	6	0	0.0
1959	1,243,000	13	0	0.0
1960	1,283,000	3	0	0.0
1961	1,331,944	16	0	0.0
1962	1,370,000	8	0	0.0
1963	1,405,000	2	0	0.0
1964	1,432,000	4	0	0.0

HEALTH UNITS

E. S. O. Smith, M.A., M.B., B.Chir., D.P.H., D.I.H., Director

The origin of Health Units in Alberta goes back to 1931, when, with the assistance of a grant from the Kellogg Foundation, preventive health services previously enjoyed only by the residents of major cities were introduced for the first time into two rural areas. During the ensuing 20 years, six more Health Units were established.

With the introduction of The Health Unit Act in 1951 it became very much easier for municipalities to group together voluntarily and provide themselves with preventive health services. During the next ten years there were 17 additional Health Units formed, but one of these, serving the Town of Forest Lawn, was subsequently disestablished when that community was annexed by the City of Calgary.

Annexation of the Town of Jasper Place by the City of Edmonton on the 17th August, 1964, led the Jasper Place Health Unit to suspend operations on that date, ten years after it first came into existence. All the agency's full-time employees were given an opportunity to join the City of Edmonton Health Department, and the Health Unit was formally disestablished on the 31st December, 1964.

Two other Health Units were affected by boundary changes during the year. The Big Country Health Unit was enlarged by inclusion of the Municipal District of Acadia, and the Mount View Health Unit was diminished by elimination of the Town of Bowness when that community was annexed by the City of Calgary.

By the end of 1964, therefore, there were 23 Health Units in operation, and the population served by them was 707,387, or approximately 90.7 per cent of the people residing outside of the cities of Edmonton and Calgary. The following is a list of these Health Units, showing for each one the location of its headquarters, the population figure upon which its grant from the Department was based for the fiscal year beginning the 1st April, 1963, its approximate area and its population density:

Name of Health Unit	Headquarters	Population	Area in Square Miles	Population Density
Alberta East Central	Stettler	50,511	7,300	6.91
Athabasca	Athabasca	21,137	8,500	2.49
Banff National Park	Banff	4,101	2,600	1.18
Barons-Eureka	Coaldale	28,179	3,000	9.39
Big Country	Hanna	14,771	8,800	1.68
Chinook	Fort Macleod	22,825	4,000	5.71
City of Lethbridge	Lethbridge	36,257	12	3,021
Drumheller	Drumheller	28,894	4,200	6.88
Edson	Edson	23,300	11,000	2.12
Foothills	High River	23,362	3,800	6.15
Grande Prairie	Grande Prairie	34,064	18,400	1.81
Jasper National Park	Jasper	2,902	4,200	0.55
Leduc-Strathcona	Edmonton	31,522	1,900	16.59
Medicine Hat	Medicine Hat	49,560	9,300	5.33
Minburn-Vermilion	Vermilion	29,513	5,000	5.90
Mount View	Calgary	31,980	4,300	7.44
North Eastern Alberta	St. Paul	36,874	6,000	6.15
Peace River	Peace River	34,198	26,300	1.30
Red Deer	Red Deer	66,343	4,500	14.74
Stony Plain-Lac Ste. Anne	Stony Plain	25,423	4,300	5.91
Sturgeon	St. Albert	52,093	3,700	14.08
Vegreville	Vegreville	30,361	3,700	8.21
Wetoka	Wetaskiwin	29,227	3,100	9.44

The services customarily offered by Health Units include the prevention and control of communicable diseases, the administration and distribution of biologicals, the local control of tuberculosis, maternal and child health programs, school health services, health education and mental health programs, and a public health inspection service for environmental sanitation. Most Health Units in 1964 were also offering a full-time or part-time dental service.

The categories of staff required to operate these services, and the number of positions in each category established by the end of 1964, with corresponding figures for the five preceding years, are shown in the following table:

Category of Staff	1964	1963	1962	1961	1960	1959
Medical Officers	23	24	24	24	24	23
Dental Officers	13	12	9	8	7	3
Public Health Nurses	136	143	138	135	130	120
Public Health Inspectors	34	34	34	34	32	31
Dental Auxiliaries	18	14	.....	.....	.....	.....
Dental Assistants	6	7	7	7	6	3
Stenographer-Technicians	55	55	52	51	47	42
Secretary-Treasurers	23	24	24	24	24	23

Six new Medical Officers were appointed to Health Units during the year, including one for the Jasper Place Health Unit a few months prior to its disestablishment, and a period of individual orientation was arranged for each one whose appointment was on a full-time basis. Two other openings for Medical Officers were filled by inter-unit transfer.

In his capacity as consultant to Health Unit Boards and Medical Officers of Health, and in response to specific invitations, the Director of Local Health Services made 29 visits during the year to twelve different Health Units.

The annual Health Unit Conference was held in the Department from the 25th to the 27th November, 1964, and each Health Unit was invited to send its Chairman or one of its Board Members, its Secretary-Treasurer, its Medical Officer of Health (or Senior Nurse in the absence of a Medical Officer) and its Dental Officer. Also invited to attend were the Medical Officers of Health and Directors of Dental Health Services of the City Health Departments of Edmonton and Calgary, and representatives of the Foothills Region, Indian and Northern Health Services. Among the resolutions which emerged from the conference, and which were submitted for the Minister's consideration, was a request for a study of Health Unit organization, with particular reference to the population limits for economic operation.

PUBLIC HEALTH NURSING

Janet C. Bailey, D.P.H.N., R.N., Director

Through the established pattern of operation of the Division of Local Health Services, the service given by the public health nursing branch continues as a consultative service to the staff of health units with particular regard to matters relating to nursing program development, personnel and organization. Each year has seen continued development of nursing programs in most units as well as a gradual increase in the number of nurses employed. In contrast, the long established Municipal Nursing Service has been gradually decreasing. In 1958 there were thirty Municipal Nursing Services operating throughout the Province, whereas in 1964 there were only sixteen and two of these were on a half-time basis. As all-weather roads make transportation easier and as medical and hospital facilities are more available a further decrease in the Municipal Nursing Service can be expected.

PUBLIC HEALTH NURSING

In December, 1964, there were 287 public health nursing positions in the health units and Health Departments of Calgary and Edmonton. A total of seven new positions were created during the year and there was a 4.7% increase in the number of qualified public health nurses. In general there was a greater degree of stability noticed in the nursing staffs and a reduced number of vacant positions.

Jasper Place Health Unit discontinued operation in August when the Municipality was amalgamated with the City of Edmonton. The same month the Municipality of Bowness, formerly part of the Mount View Health Unit, amalgamated with the City of Calgary. In both areas the public health nurses were given the opportunity of joining the respective City Health Departments or transferring to other Health Units.

TABLE I
DISTRIBUTION OF NURSES EMPLOYED IN HEALTH UNITS, MUNICIPAL NURSING SERVICE, AND CITY HEALTH DEPARTMENTS IN RELATION TO BASIC QUALIFICATIONS

Service	With Public Health Preparation				Without Public Health Preparation				Total	
	Number		Percentage		Number		Percentage			
	1964	1963	1964	1963	1964	1963	1964	1963	1964	1963
Health Units	64	63	46.7	45	73	77	53.3	55	137	140
Municipal Nurses	5	4	35.7	28.6	9	10	64.3	71.4	14	14
City of Edmonton	34	26	45.3	38.8	41	41	54.7	61.2	75	67
City of Calgary	60	56	98.4	94.9	1	3	1.6	5.1	61	59
Total	163	149	56.5	51.8	124	131	43.5	48.2	287	280

TABLE II

DISTRIBUTION OF NURSES IN RELATION TO POPULATION, AREA AND POPULATION DENSITY IN HEALTH UNITS AND CITY HEALTH DEPARTMENTS ARRANGED IN ASCENDING ORDER OF POPULATION SIZE, DECEMBER, 1964

HEALTH UNITS	Population	Area in Square Miles	Population Density	No. Health Unit Nurses		Number of Municipal Nurses	Nurse-Population Ratio
				Senior	Staff		
Jasper National Park....	2,902	4,200	0.69	..	1	..	1:2,902**
Banff National Park....	4,101	2,600	1.58	..	1	..	1:4,101**
Big Country	14,824	8,800	1.68	1	2	..	1:4,941
Athabasca	21,232	8,500	2.50	1	5	3	1:2,664*
Chinook	22,817	4,000	5.70	..	4	..	1:5,704
Foothills	23,439	3,800	6.17	1	3	..	1:5,860
Edson	23,508	11,000	2.14	1	4	..	1:4,702
Stony Plain-Lac Ste. Anne	25,205	4,300	5.80	1	3	..	1:6,301
Barons-Eureka	28,292	3,000	9.43	1	4½	..	1:5,144
Drumheller	29,225	4,200	7.31	..	6	..	1:4,871
Wetoka	29,365	3,100	9.47	..	5	..	1:5,873
Minburn-Vermilion	29,728	5,000	5.94	1	5	..	1:4,955
Vegreville	30,574	3,700	8.26	1	5	..	1:5,096
Leduc-Strathcona	31,725	1,900	16.70	1	6	..	1:4,532
Mount View	32,255	4,300	7.50	1	4	..	1:6,451
Peace River	34,122	26,300	1.30	1	6	3	1:4,633*
Grande Prairie	35,483	18,400	1.93	1	6½	3	1:4,277*
City of Lethbridge	36,722	12	3,060.	1	6	..	1:5,246
North Eastern Alberta..	38,183	6,000	6.36	1	6	..	1:5,455
Medicine Hat	49,812	9,300	5.36	1	9	..	1:4,981
Alberta East Central....	51,256	7,300	7.02	..	8	..	1:6,407
Sturgeon	53,964	3,700	14.58	1	8	..	1:5,996
Red Deer	68,254	4,500	15.28	1	10	..	1:6,205
	716,988						
CITIES				Dir. Sup. Staff			
Calgary	304,040	78	3,551.	2	5	56	1:4,826
Edmonton	349,233	69	4,504.	1	8	65	1:4,719
Total Population	1,370,261						

* Population reduced for ratio by subtracting population served by Municipal Nurses.

** Part-time service.

SENIOR NURSES' WORKSHOP

The second annual workshop for senior public health nurses was held in September. The main purpose of the three-day session was to assist the nurses with their administrative and supervisory nursing responsibilities. We appreciated the assistance given the group by Mrs. A. R. MacKinnon, Associate Director of Nursing Education at the Foothills Hospital, Calgary, and Miss B. Harrington, Lecturer at the School of Nursing, University of Alberta.

PROFESSIONAL TRAINING GRANTS

This year there were twenty-four nurses who received professional training grants for public health nursing courses, whereas last year funds were available for only eight. When these nurses have completed their courses their placement in positions throughout all areas of the Province should do much to relieve the present shortage of qualified public health nurses.

MUNICIPAL NURSING SERVICE

Although the number of Municipal Nursing Services is gradually decreasing, the need for nursing service of a minor and emergency nature continues in several locations in the northern part of the Province.

After a temporary closure of the service at Hines Creek, a half-time service was approved by the Minister of Health but was again interrupted at the end of the year with the resignation of the nurse. The Peace River Health Unit have taken over the preventive service aspects in this area.

The Paddle Prairie Municipal Nursing Service was moved to the bigger and more centrally located community at High Level. The newly organized Nursing Service Committee and the Department of Municipal Affairs are proceeding with their plans to build a new combined office and residence.

The Swan Hills and Tangent-Eaglesham Nursing Services have remained closed during the year. The Peers Municipal Nursing Service was temporarily closed at the end of October when the nurse retired. For several years the Edson Health Unit had been gradually taking over the public health services in this area. Recruitment of new nursing staff for our small rural communities remains a continuing problem.

At the Municipal Nurses' Conference held in January areas of service met in day to day work were reviewed. These included minor surgical problems, prenatal teaching, common paediatric conditions, and school health programs. A field trip to the Workmen's Compensation Board Rehabilitation Clinic was also included.

A report of the immunization, child health conferences and school health and other public health programs is not included here as the statistics for these services are included in the annual reports of the respective health units in which all but four of the Municipal Nursing Services are located.

TABLE III
SUMMARY OF MINOR AND EMERGENCY TREATMENT SERVICES
BY MUNICIPAL NURSES

Age Group	Office		Home	
	1964	1963	1964	1963
Infant	1,501	1,295	397	239
Preschool	3,359	2,776	910	424
School	3,781	3,530	539	421
Adult	8,173	7,959	811	634
Older Age Group	654	835	365	482
Totals	17,468	16,395	3,072	2,200

This year there were 1,871 patients referred by the Municipal Nurses for care by their physicians or to hospitals, an increase of 145 over 1963. There was an increase in the number of accidents attended to by the nurses, from 805 to 879. There were 24 home deliveries. In even the most remote areas patients are urged to plan for hospital delivery. However, due to transportation difficulties, or indifference of patients, Municipal Nurses are occasionally requested to be in attendance at home deliveries. Each nurse has emergency equipment available at all times.

MATERNAL AND CHILD HEALTH

T. Beryl Ebert, B.Sc., R.N., Nursing Consultant

During 1964 the Nursing Consultant continued to work with public health and hospital personnel in extending and co-ordinating maternal and child health programs.

LIAISON WORK

The public health nurses in almost every Health Unit visit the local hospitals weekly, primarily to see post-partum patients, but also to work more closely with hospital personnel. In all instances the referral of patients is encouraged.

It has been observed during visits to Health Units in 1964 that there is an increase in hospital visiting and referral of patients, and that working relationships between hospital and public health staff are mostly excellent.

In Edmonton a group called the "Maternity Liaison Group" has been meeting monthly. Representatives from the obstetric wards of the four hospitals, the City Health Department, the Victorian Order of Nurses, and nearby Health Units meet with the Nursing Consultant to discuss various aspects of maternal and infant care. The stated objectives of the group are:

1. To share ideas, discuss common problems, and try to arrive at workable solutions.
2. To develop methods of using the ideas put forth by the group.
3. To increase liaison between hospital and public health nursing staff.

The overall purpose is to work toward a co-ordinated maternity nursing program, and this is being done through informal meetings and discussion of topics of mutual interest.

SERVICES TO HEALTH UNITS

During 1964 visits were made to 18 Health Units. Programs were discussed, and following discussion and evaluation suggestions made. Problems related to initiating changes are chiefly said to be lack of sufficient staff and shortage of time. In Health Units operating without a senior nurse the close supervision and in-service education of public health nurses is very difficult.

A survey of school health services in each Health Unit was conducted in order to make a provincial contribution to a report for the Child and Maternal Health Advisory Committee meeting in Ottawa. There are great variations throughout the Province in the service being offered to school children, although the basic services are similar.

There is an obvious need for an increase in services to expectant mothers, by extending classes to areas where they are not given, and more particularly by establishing prenatal teaching on an individual basis by home visiting. The latter must be the responsibility of each Health Unit, and is usually facilitated by developing good working relationships

with local doctors and making them more aware of the service that public health nurses can offer to their prenatal patients.

Prenatal classes are conducted in one or more centres in fifteen Health Units. In order to better prepare nurses to teach classes and for individual prenatal counselling, an Institute on Prenatal Teaching is to be held in February, 1965.

Routine testing for phenylketonuria is done in the majority of Health Units. Although this is a recognized public health service, we look forward to the time when a more extensive and accurate coverage can be obtained by the development of programs for testing all newborn infants before they leave the hospital.

LECTURES AND MEETINGS

Lectures were given to the following groups during the year:

The advanced obstetrics students at the University of Alberta.

The third year medical students—3 hours on maternal and child health public health services.

Civil Defence, Nurses' Orientation Course—4.

Public health nursing students at the University of Alberta.

Meetings attended included those of the Perinatal Mortality Committee, the Poison Control Advisory Committee, and the Alberta Committee of the Canadian Conference on Children.

A five-day workshop in Banff on Supervision, and a one-day workshop on Family Life Education were interesting and instructive.

A manual on related health agencies and services in Alberta was prepared for the use of Health Units, and will be distributed early in 1965. Agencies and organizations offering health services to the public are described.

DENTAL PUBLIC HEALTH

A. T. Salter, D.M.D., D.D.P.H., Director

The prevention and control of disease is the challenge of the public health science era—the 20th Century. It involves a change from the diagnosis and treatment of the individual to the diagnosis and treatment of the community at large as a patient.

Statistics received from provincial and national surveys indicate more than ever before in our history that the incidence and prevalence of dental disease and its many ramifications has not been substantially reduced through the treatment approach alone and it is more self-evident than ever before that the approach to this national health problem must be through means of education to motivate the public to accept, appreciate and practise basic proven preventive methods of dental health.

The Medical Officers and Dental Officers in the Health Units of Alberta are fully aware of this need for education in the prevention of dental disease for our citizens. In Alberta we have accepted this challenge to motivate the people to appreciate the value of good oral health and to accept and practise sound, practical, preventive measures in order to attain and maintain the best dental health standards possible. This principle is attainable only by means of a well informed public.

The objectives of dental public health are to promote and have accepted by the people that good oral health is the personal responsibility of the individual and is accomplished by placing the emphasis on the prevention of oral disease and oral maldevelopment; to encourage early treatment and maintenance of the oral tissues and natural dentition; to promote the development of procedures for the early detection and control of such conditions when they are not prevented; to promote principles of prevention and education and develop the attitudes that will motivate the public to accept, practise and demand these preventive and control measures.

Basic dental public health principles are utilized by the dental officers and staff to achieve these objectives, and these principles are contained within the philosophy of public health. They formulate a practical approach to the implementation and maintenance of effective dental health programs.

In general, the approach to the dental health problem is by means of the following policy as outlined by the Canadian Dental Association:

- (1) To encourage the collection and evaluation of baseline data on dental conditions.
- (2) To encourage and assist in prevention by:
 - (a) Intense and continuous dental health education throughout the community, with particular emphasis on the importance of those preventive measures which can be performed only by the individual himself, or as a member of his family group.
 - (b) The use of those preventive measures which can be provided through community organization, such as fluoridation of communal water supplies.

- (c) The use of preventive services which can be rendered by the dental profession and its auxiliaries, such as topical fluorides.
- (3) To encourage the early diagnosis and systematic treatment of those conditions which cannot be prevented in the light of present scientific knowledge.

The duties of the Director of Dental Health Services are to encourage, assist and guide in the planning, organizing, and administration of dental health programs in all Health Units and City Health Departments throughout the Province.

Seventeen of the twenty-three Health Units have a dental public health program involving personnel as follows:

Full-time	Part-time	Auxiliaries	Assistants
6	20	29	16
Dental Officers	Dental Officers		
For City of Edmonton		For City of Calgary	
Dental Director	1	Dental Director	1
Clinical Dentist	1	Clinical Dentist	5
Dental Auxiliary	4	Dental Auxiliary	4
Dental Assistant	4	Dental Assistant	5

Dr. H. Bennett, Dental Health Officer for the Drumheller Health Unit and Dr. T. Curry, Dental Director for the City of Calgary Health Department were each successful in obtaining a Diploma in Dental Public Health from the University of Toronto and returned to their respective positions in June, 1964. Both of these men were sponsored under the Federal Professional Training Grants. Leduc - Strathcona Health Unit inaugurated a dental health program on August 1st, 1964. Dr. W. Zacherl, part-time Dental Officer for the Leduc - Strathcona Health Unit, and Research Associate, University of Alberta, has a Diploma in Dental Public Health, as has Dr. T. Gavriloff, Dental Director for the City of Edmonton Health Department.

Dr. G. Taylor was appointed full-time Dental Officer for the Grande Prairie Health Unit, his official duties commencing April 1st, 1964. Dr. Taylor is a graduate of Ohio State University and has proven himself to be a true advocate for dental public health.

It is my sad duty to report the sudden passing of Dr. V. Potter, Dental Officer, Sturgeon Health Unit, on November 23rd, 1964. Alberta has lost a staunch supporter of dental public health. The exemplary preventive dental health program at Sturgeon will remain as a tribute to him. It was my privilege to have known Dr. Potter as a Dental Officer and as a friend.

In the capacity of consultant to Health Unit Boards and to Medical and Dental Officers of Health, the Director, in response to specific invitations, made fifteen visits during the year to twelve Health Units.

It was a privilege to receive permission to attend the following meetings during 1964:

- (a) Canadian Public Health Association (Alberta Branch)—Calgary, April 2-3, 1964.
- (b) Canadian Dental Association Board of Governors Meeting and Convention—Edmonton, June 24 - July 1, 1964.

- (c) Alberta Dental Association Board of Governors Meeting—Calgary, October 23-24, 1964.
- (d) Canadian Civil Defence Course—Arnprior, Ontario, November 15-20, 1964.
- (e) Executive Council Meeting, Canadian Public Health Association—Toronto, Ontario, November 21, 1964.

At the invitation of the Canadian Dental Association a provincial exhibit for the national convention was displayed. It proved very successful and appreciation is given to Dr. Gavriloff, Dr. Potter, Dr. Zacherl and Dr. McPhail for their valued assistance in the planning and construction of this display.

Each Health Unit having a dental program was invited to send one of its Dental Officers as a delegate to the annual Health Unit Conference which was held in the Department, November 24-27, 1964. The topics discussed were both technical and administrative in nature. The combined meetings with the Medical Officers of Health were most appreciated by the fourteen dental delegates present. This proved to be a very successful conference. The main topics on the agenda were:

- (a) Regional concept for dental service.
- (b) Formation of a national body of dentists in public health services.
- (c) Recruitment of public health dentists.
- (d) Standardization of dental health surveys.
- (e) Elementary statistical procedures applicable to dental public health.
- (f) Dental budgets.
- (g) Dental auxiliary programs.
- (h) Dental public health exhibits, evaluation of dental health educational materials.

Health Unit Preventive Dental Health Programming

The preventive dental health program is an integral part of the Health Unit services generally and its success is governed to a large degree by its acceptance and use by the public, thus education is an important factor. The programs in operation are basically preventive and provide:

- (a) dental health education (relating to early and regular dental examination and care) nutrition, diet, fluoridation, topical use of fluorides, oral hygiene, the use of fluorides on an individual basis, home care and parent responsibility generally;
- (b) topical fluoride applications, examination and referral, parent and child consultations, dental health surveys, research projects and the use and encouragement of these measures;
- (c) actual treatment services and emergency services are made available in the preventive programs administered by local Health Units autonomous in their own rights as outlined in the Health Unit Act of Alberta.

Health Unit Statistics

Statistics relating to caries attack rate for the Province should be viewed with some reserve. Although based on accurate surveys and weighted in compilation to give a true picture, it was necessary to carry out some interpolation, as complete provincial data will not be available for some months. It was also necessary to make allowances for natural fluorides in rural areas from which data is not available and also to consider the lower treatment levels in isolated rural areas. This may have introduced an additional error of possibly 5% in the treatment level, particularly in the pre-school age groups. The caries attack rate (d.e.f., D.M.F.) will have been less affected.

These statistics are based on public health data which was gathered without x-rays. Surveys taken without x-rays are accurate in the sense that undiscovered proximal caries become evident in the following year. It should also be recognized that these undiscovered caries would alter only the number of decay untreated teeth (increase), the totals (increase) and the treatment level (decrease). This effect would differ with each age group and treatment level.

The d.e.f. does not include caries in lateral or incisor teeth. Deciduous tooth data also becomes most unreliable in age groups beyond the age of 9 years. This is due to the natural exfoliation resulting in an apparent decrease in caries attack rate. Examination of the permanent tooth indices will indicate otherwise. The apparent decrease indicates only that caries and restored teeth are being exfoliated at a greater rate than the caries attack is progressing.

There appeared to be little difference in the caries attack rate between urban and rural areas, although the treatment levels tended to be higher in the urban areas, particularly in the pre-school age groups, and this difference tended to disappear by the age of 8 years.

The treatment level is calculated from actual tooth counts and indicates the percentage of affected teeth restored or extracted. It will be noted that by age 7 this levels off at about 65%.

These statistics are compiled from 1964-65 data (School Year) and include data from the Health Units, Cities of Edmonton and Calgary, and Faculty of Dentistry, University of Alberta.

A comparison with the 1961-62 compilation, which was somewhat less complete in rural areas, indicates a definite and consistent rise in the treatment level and a definite and consistent drop in caries attack rate (d.e.f., D.M.F.).

The decrease in caries attack rate can be largely attributed to the increasing use of fluorides in dentifrices, public health programs, private practice, and communal water supplies and the acceptance of preventive dental health measures.

During the past three years there has been an apparent 17% decrease in the caries attack rate in children from 4-13 years of age. The treatment level rose on an average of 18% in the same age groups during the same period of time.

CARIES ATTACK RATES AND TREATMENT LEVELS—Province of Alberta

Age	Number of Children	Decayed Teeth/Child	Extracted Teeth/Child	Filled Teeth/Child	Total Per Child d.e.f. & D.M.F.	Treatment Level
3	309	3.1230	0.0550	0.2071	3.3851	8%
4	2109	2.5484	0.1272	1.0990	3.7746	32%
5	192	1.6875	0.2344	2.8750	4.9427	62%
6 Deciduous	2457	3.5640	0.6612	1.8826	6.1078	42%
Permanent	2137	0.6196	0.0010	0.1551	0.7757	20%
7 Deciduous	1654	4.1836	0.6622	2.0377	6.8835	39%
Permanent	1588	2.1871	1.0144	3.0756	6.2740	65%
8 Deciduous		0.8984	0.0111	0.6855	1.5950	44%
Permanent		3.0855	1.0255	3.7611	7.8690	61%
9 Deciduous	1938	1.8054	0.7966	2.3532	4.9552	63%
Permanent	1408	1.0611	0.0858	1.8629	3.0096	65%
10 Deciduous		2.8665	0.8824	4.2161	7.9648	64%
Permanent	1031	0.6976	0.2621	0.7432	1.7029	59%
11 Deciduous	1136	1.4019	0.1845	2.7550	4.3414	68%
Permanent		2.0995	0.4466	3.4982	6.0443	64%
12 Deciduous		2.0991	0.4382	4.5484	7.0857	70%
Permanent	977					

d.e.f.—decayed, extracted, filled—deciduous teeth.

D.M.F.—decayed, extracted, filled—permanent teeth.

At the request of the Dental Officers a one-day course on elementary statistical procedures is to be presented during April, 1965. This presentation should assist the Health Units in the development and utilization of evaluation procedures by which baseline data can be obtained and the success of various programs at the Health Unit level adequately measured. It is planned to establish and standardize the recording of data pertaining to Health Unit operations through the preparation of recommendations for the format and content of Health Unit annual reports.

Research

Research projects under progress in the Province, carried out within the Health Units and City Health Departments, in direct co-operation with the Faculty of Dentistry, University of Alberta, with grants received from the National Health Grants and the National Research Council together with grants administered by the Research Council, University of Alberta, are as follows:

Area	Study	Completion Date
Edmonton	Dentifrice study—(2 products)	1964
	Thumb sucking treatment study	1966
	Growth patterns in children—maxilla and mandible....	1967
	Eruption patterns and times of deciduous teeth	1967
Jasper Place	Dentifrice study—(4 products)	1965
Leduc-Strathcona	Dentifrice study—(6 products)	1967
Stony Plain-Lac Ste. Anne	Topical fluoride paste	1967
Wetaskiwin-Camrose	Tooth size as related to fluoride intake	1965
	Effect of fluorides on eruption times and patterns of deciduous teeth	1966

Short-Term Health Unit Programs

The Minburn-Vermilion Health Unit utilized the services of a third year student during the summer months. The reports received from this service were of an enthusiastic nature both from the participating student and the Health Unit staff.

Volunteer Private Practice Programs

Numerous requests were received throughout the year from organizations representing many communities of the Province. These communities did not ask for free dentistry but for the services of a dentist, or that dentists be encouraged to practise in their community, especially to make dental care available for the children. The people of this Province are becoming increasingly aware of the benefits of good dental health and to meet this need are attempting to encourage dentists to establish or at least visit them on a permanent basis.

The Village of Warburg is an outstanding example of community effort. The Mayor and members of the Council approached this Department to aid them in obtaining dental service for their community. These elected representatives had made arrangements with a dentist from Edmonton to visit them for a period of one-half day per week for five weeks. The Department made available the transportable dental equipment. Through the guidance and encouragement of this Department these public spirited individuals have taken upon themselves to establish a permanent dental clinic. It has been adequately equipped by the community and the dentist now visits Warburg one day per week. Commencing January, 1965, this clinic will be operated for two full days per week by two dentists spending one day each serving the community on a private practice basis. The facilities and equipment are rented by the dentists from the Village.

Through the fine co-operation of the Alberta Dental Association and its members the following communities were rendered dental services for 1964. These programs were conducted on a private practice basis and the transportable dental equipment was made available on loan by the Department. Mileage and transportation costs were paid by the Department.

Communities	Date
Warburg	February through May
Empress	} May 15 through September 1
Lac La Biche	
Consort	
Oyen (2)	
Fort McMurray	June 1-7
Fort McMurray	September 21-26
Fort Vermilion	June 20-27
Slave Lake	September 21-27
Slave Lake	September 28-October 2
Lac la Biche	September 21-29

COMPARATIVE TABLE OF VOLUNTEER PRIVATE PRACTICE PROGRAMS

Year	Number of Clinics
1961	14
1962	14
1963	15
1964	12

Other Factors Pertaining to Dental Public Health

Registered Dental Technicians

Eight meetings of the Dental Technicians Board were held during the year. Two candidates were successful in both the written and practical examinations held October 31st, 1964, at the Northern Alberta Institute of Technology, and were registered in accordance with the Act. There are fifty-four registered dental technicians in Alberta.

Evening classes in dental technology were arranged by the Board with the Northern Alberta Institute of Technology. Courses of thirty

hours each were presented in Crown and Bridge and Full Denture construction. Registration for Crown and Bridge was six and for the Full Denture course, fifteen.

Twelve students are registered in the first year of the Dental Technician Course and five for the second year.

Dental Assistants

The first class to graduate from this course in June numbered thirty-four. There are twenty-one registered in the present year and over one hundred applications have been received for 1965-66 from which thirty-two will be accepted. This is a one-year academic course offered by the Northern Alberta Institute of Technology. The graduates have been readily accepted by the dental profession.

Dental Auxiliary Advisory Committee

One meeting was held on March 7th, 1964, and arrangements and recommendations were made for the placement of the graduating dental auxiliaries. Sixteen accepted appointments in accordance with the fulfilment of their professional training grant bursary. One student from the graduating class was required to remain until February, 1965, to obtain her requirements for graduation, there was one failure and two did not accept appointments. Arrangements have been completed by these three students to reimburse the Government for the financial assistance received by them.

Faculty of Dentistry

(a) Undergraduate Registration

1st year	50
2nd year	52
3rd year	49
4th year	41
	<hr/>
	192

A total of 262 formal applications were received. All Alberta resident applications with the necessary qualifications were accepted for registration in first year. Of the fifty registered, thirty-nine are Alberta residents, two are from British Columbia and nine from Saskatchewan.

(b) Graduate Registration

Total—5

(c) Dental Hygiene

First year registration is twenty-two and nine of these are registered in the dental auxiliary course.

Second year registration is eleven, all being registered in the dental auxiliary course. One of these auxiliaries will complete her course by February, 1965. This student was unable to graduate in June as her requirements had not been attained and she is completing these requirements at her own expense.

It is to be noted that nineteen of the registrants for the dental auxiliary courses are in receipt of the professional training grant bursary. Two students in the second year were not receiving the benefits of the professional training grant bursary during their first year but did apply for this assistance for the second year and were accepted.

Fifteen of the nineteen students receiving bursaries are Alberta residents, four are residents of Saskatchewan.

It is gratifying to note that a large percentage of the first year dental students (78%) are Alberta residents and that the School of Hygiene has a maximum enrolment in the first year.

The present and future detailed use of auxiliaries and the more prominent utilization of their training qualifications should receive concentrated consideration and publicity. They are a very valuable added asset to the dental public health team and should warrant significant recognition for their potential services to the Health Units and to the private practitioners.

Education Services

This Department, through the Health Education Services, made available and distributed upon request 49,403 publications on preventive dentistry and 141 bookings were made for dental films.

The most popular booklet requested for educational purposes was the "Effective Methods for Preventing Tooth Decay". This booklet has been under revision and shall be available in 1965. Dr. C. Castaldi, Dr. C. W. B. McPhail and Mr. J. C. MacNeill were invaluable in their assistance in making this up-to-date version possible.

Health Advisory Committee

A meeting was held on June 5th with the committee members, Mr. Neil Purvis, Associate Director of Curriculum as Chairman.

The following agenda was studied:

- (a) Elementary and Junior High School health programs.
- (b) Consideration of Grade X health education.
- (c) Safety education.

Summary of meeting:

The elementary and junior high school health education curriculum was studied.

A list of questions to be answered during the experimental use of the courses was prepared.

A list of corrections in the course outline was made.

Seminars in Public Health Dentistry

Under the auspices of the National Health Grant, dental public health seminars were planned for 1964-65. These seminars and workshops are directed primarily towards other members of the community, such as Health Unit personnel and Board members, school superintendents, principals, teachers of health education, home and school associations, women's groups, city, town and village officials, dentists, doctors and related disciplines, etc.

By means of actual demonstrations, lectures and film media, it is intended to gain the support of community leaders, in addition to dental practitioners, to assist in promoting the value and effectiveness of public health dentistry.

Due to the lack of time and weather conditions it was possible to hold but one seminar during 1964 and this was at St. Paul, North Eastern Alberta Health Unit, on September 16th. Further seminars are planned for 1965 in the following Health Units:

Chinook
Edson
Peace River

Alberta Dentists

The number of dentists practising in Alberta since 1911 has been as follows:

Year	Number of Dentists	Population Dentist Ratio
1911	105	3565
1921	191	3081
1931	231	3167
1941	201	3961
1948	268	3150
1963	467	2980
1964	484	2943

499 dentists were licensed to practise in the Province during 1964. Due to retirement, death and residence change from the Province, there were 484 dentists registered with the Alberta Dental Association as of December 31st, 1964.

This indicates that the dental service available in Alberta has remained fairly constant during the last six years. The national ratio of dentist/population is 1/3000 population.

Fluoridation Status

By December, 1964, approximately 70,000 Albertans representing about 4.5% of the population were living in communities with controlled fluoridation and over 20,000 were using water from community water systems which contained 1.0 or more parts per million fluoride from natural sources.

Thus about 1 in every 16 persons in Alberta is using water from a communal system which contains an adequate level of fluoride to prevent tooth decay. This is, however, far below the national average in Canada of one in five Canadians using fluoridated water. Alberta stands 4th to last in Canadian provinces.

Three successful plebiscites were held during 1964 and installation of the equipment is expected during 1965.

HEALTH EDUCATION SERVICES

J. C. MacNeill, B.Sc., M.P.H., Director

Health Education predicates its effort on the philosophy that it is the continuous rain that soaks. To this end every possible means of communication is utilized to convey health information. The task of the Director is somewhat like that of the conductor of an orchestra who probably cannot play any of his orchestral instruments as expertly as the players in his orchestra, but his function is to ensure an integrated performance in which the aim is clearly defined, and in which each of the participants plays his proper part.

In general, the Alberta Department of Public Health, through the Health Education Service, provides a consultive and advisory service in planning and implementing public health education programs to meet specific health needs. This service is available to other Government Departments, Divisions within the Department of Public Health, local Health Units, City Health Departments, voluntary health and social agencies, schools, and interested community groups and individuals.

The position of Public Health Education Assistant has been vacant during the year. A competition held in June failed to recruit a suitable candidate. It is hoped during the coming year, an adjusted salary scale and revised job description will assist in acquiring a person with the desired qualifications and experience.

The Branch continued to prepare and present information on a variety of health education topics to the following groups. These included Alberta Safety Council, Alberta Tuberculosis Association, Alberta and Edmonton Cancer Societies, Alberta and Edmonton Mental Health Associations, Department of National Health and Welfare, Home and School Associations, Industrial Editors' Association, religious and church groups, Junior Chamber of Commerce, Teachers and School Superintendents, University of Alberta, and Women's Institutes.

The Director served as Secretary for the Alberta Division of the C.P.H.A., the Health Sub-Committee of the Canadian Conference on Children, the Poison Control Advisory Committee, the Steering Committee of the Alberta Division of the C.P.H.A., and was a member of the Nursing Recruitment Committee, the Provincial Smoking and Health Committee, the Scientific Program Planning Committee of the Alberta Division of the C.P.H.A., and the Technical Advisory Committee on Health Education Concerning Smoking and Health of the Department of National Health and Welfare.

Several new pamphlets were produced during the year including one on 'Phenylketonuria Testing'. Another leaflet prepared by the Branch was entitled 'Nitrate Poisoning of Infants'. Both these publications were produced in co-operation with the Maternal and Child Health Consultant. A pamphlet on 'Cortisone' was prepared and distributed to local Health Units and schools throughout the Province. The Department of National Health and Welfare asked the advice of the Branch on a pamphlet entitled 'Cerebral Palsy' and the revised issue of the 'Canadian Mother and Child' booklet. Finally, a booklet on 'Venereal Disease' was prepared in co-operation with the Social Hygiene Division, and will be ready for distribution early in 1965.

The Branch implemented the smoking and health program in keeping with the objectives set forth by the Technical Advisory Committee on Health Education Concerning Smoking and Health. Activities have focused on a series of informal meetings with key governmental and voluntary agency personnel, to work out ways of complementing and dovetailing programs to achieve the stated objectives. These discussions have resulted in the following co-operative activities.

Copies of the 'Smoking and Health Reference Book (Canada)' were distributed to the 24 local Health Units, 2 City Health Departments and the Municipal Nursing Service. The book was also made available to other interested persons through local health personnel.

In co-operation with the Department of Education, over 3,000 'Smoking and Health Information Kits' were distributed to all school superintendents, principals, health teachers and school libraries in the Province. Each kit contained a message from the Chief Superintendent of Schools for Alberta, suggesting that schools had a duty to inform their students about the risk to health associated with cigarette smoking. Local health units will provide assistance to school authorities in implementing their program.

The Provincial Health Advisory Committee to the Junior High School Curriculum Committee was instrumental in having the smoking and health curriculum content expanded for grades 7, 8 and 9. This change went into effect at the beginning of the school year.

To complement the instructional program of the schools, the Branch added several smoking and health films to the film library including 2 prints each of "One in 20,000" and "Smoking and You".

As in the past films and filmstrips were loaned on a rent-free basis to other Government Departments, Divisions of the Department of Public Health, local Health Units, City Health Departments, voluntary health and social agencies, schools and interested community groups and individuals. In addition, the Schools of Nursing throughout the Province indicated an increased interest in using the nursing pool films.

An estimate based on the 'Screening Report' that is returned with all films after each showing, indicates the films were shown 5,278 times (1963 — 3,846) to an audience numbering approximately 152,873 (1963 — 111,226). Thirty-one film titles were added to the library during the year. There now is a total of 495 film prints in the library.

The Public Health Library has expanded to a total of 113 books. Each Division of the Department is responsible for books which are ordered through the Health Education Services. All books are purchased through Federal Health Grant funds.

NUTRITION SERVICES

Elva M. Perdue, B.Sc. (H.Ec.), B.Ed., Nutritionist

The program of Nutrition Services has as its prime objective the improvement of health through improving the food habits of individuals and families in Alberta. An evaluation of the year's work indicates a marked increase of interest in nutrition by public health personnel, welfare workers, personnel in institutions, teachers and students, community groups and the lay public. This is verified by the fact that requests for nutrition information, printed nutrition education materials, visual education projects and speakers on nutrition subjects have increased substantially.

An indication of the nutrition problems toward which the nutrition program should be directed is provided by study of the types of information and assistance requested from Nutrition Services as well as by consultation with nutritionists employed in other agencies. Some of the problems on which the program planning has been based this year are: inadequate family meals due to a lack of knowledge, indifference or economics; the excessive consumption of sweet foods; the increasing concern for obesity; the need for recipes and menus for special diets. During the year, emphasis has been given to the further development of nutrition consultant services and reference materials to assist local public health personnel to deal effectively with these problems, particularly in the field of maternal and child health and school health.

In 1964, the limited amount of stenographic assistance (one clerk typist on a part-time basis), as well as three changes in this personnel, resulted in a considerable amount of the nutritionist's time being spent in orientating and training new staff in office routine and procedures. This made it difficult to prepare material for staff conferences of health unit personnel and limited the consultant service to institutions. It was also necessary to reduce the preparation and distribution of the mimeograph release, *Nutritionally Speaking*, from monthly to bimonthly and to postpone plans to mimeograph nutrition materials requested at health unit staff conferences.

Public Health Personnel

The local public health team is most advantageously situated to advise families on food selection and other facets of nutrition during activities such as prenatal classes, child health conferences, home and school visits. For this reason, the provision of nutrition consultant services to local public health personnel is of prime importance. Every effort has been made to keep public health personnel well informed on the latest nutrition information and to provide technical data, educational materials, and direct service with local projects and problems. Visits were made to seven health units and health departments during the year on the occasion of staff meetings. The topics discussed by the nutritionist included among others: food enrichment, feeding the school child, use of nutrition publications and posters, food exchanges for diabetic diets.

While the release, *Nutritionally Speaking*, is intended primarily to provide public health personnel with information on recent advances and new teaching materials in the field of nutrition, the mailing list of

some 865 names also includes industrial nurses, Victorian Order nurses, welfare workers, district home economists, dietitians and other hospital personnel, health and home economics teachers, university staff and selected members of the public at large. As noted earlier, the number of issues of *Nutritionally Speaking* was reduced to six this year. These covered topics such as: calcium, vitamin C, food poisoning and a review of the revised booklet, *Healthful Eating*. Additional copies of the issue on food poisoning were requested by two health units for distribution to food handlers, and copies of the February, 1963, issue on child feeding were again requested in quantity by two other health units for distribution at child health conferences. The latter would seem to indicate a need for practical guidance on meal planning for parents of young children. Since food habits are formed during these early years, this is an area where specific attention to nutrition education is most profitable.

This year there has also been a considerable increase in assistance given by correspondence to public health personnel with the nutritional aspects of their maternal and child health programs. Public health nurses are now conducting prenatal classes in 18 areas of the Province. Since at least one class in each series of lectures is devoted to prenatal nutrition, there have been numerous requests for information and references to assist in advising mothers on food selection. In view of this and because of the importance of nutrition during pregnancy to the health of the mother and infant, the nutritionist has devoted considerable time to developing the services in this field. The mimeographed prenatal score sheet entitled, *Eat It! Score It!*, was again revised to incorporate the comments received from the public health nurses. Their comments on other teaching aids that have proven effective in their prenatal nutrition lectures will be considered when these materials are revised or new materials are produced.

A problem that has continued to receive attention in the public health nurses' nutrition program is overweight. Considerable time has been devoted by Nutrition Services to studying methods and compiling materials to assist with their efforts to inform people of the dangers of overweight and of a rational approach to lasting weight control. However, the greatest emphasis has been given to methods of preventing overweight.

There were some 148 requests received from public health nurses and from individuals both directly and on referral for assistance with therapeutic diets. These were for menu suggestions and recipes for use in a wide gamut of diets, including: food allergy, gluten free, diabetic, low calorie, low potassium and restricted fat, cholesterol and sodium.

The increased number of dental auxiliaries in the health units resulted in more requests this year for assistance with problems related to nutrition and dental health. Information was provided on nutrition films, publications, posters, exhibits, and other teaching aids which would be useful in their dental education programs. For example, both the dental auxiliaries and the nutritionist have been concerned about the excessive consumption of sweet foods by school children; so, the nutritionist has supplied various educational tools designed to draw this problem to the attention of parents, children and teachers. The dental education programs are proving a valuable channel for the dissemination of nutrition information.

As in other years the nutritionist was responsible for part of the orientation of medical officers of health, municipal nurses and some

health unit nurses coming on staff. This provides an excellent opportunity to make them aware of the services of the nutritionist and of the teaching aids which are available for distribution and on loan for special projects. Time was also devoted to professional training—lecturing and the supplying of teaching aids—in co-operation with the University of Alberta and the training schools for nurses.

The nutritionist was again available to supply professional personnel in all Divisions of the Department with nutrition information and assistance with problems relating to nutrition, some of which entailed considerable research. Nutrition Services works particularly closely with the Directors of Dental Services, Public Health Nursing, Health Education and the Nursing Consultant in Maternal and Child Health in this respect.

Other Government Departments and Agencies

In 1964, there was continued co-operation with provincial and federal government departments as well as with nonofficial agencies concerned in any way with nutrition. At the provincial level, there was an active rapport with personnel in the Departments of Agriculture, Education and Public Welfare. At the federal level, a close working relationship was maintained with the Departments of National Health and Welfare, Agriculture, and Fisheries. The nonofficial agencies include, among others: Milk Foundation of Edmonton, Associated Milk Foundations, Canadian Diabetic Association, Bakery Foods Foundation, and Consumers' Association of Canada.

At the request of the Alberta Department of Public Welfare, the nutritionist continued to serve on a committee with the Supervisor of Women's Extension Services of the Provincial Department of Agriculture, for the annual revision of the standards used in the food allowance scales for welfare assistance. The Department of Public Welfare also requested publications for use in in-service training programs, as well as menu suggestions and quantity recipes for institutions concerned with feeding children and unmarried mothers.

Until September, 1964, when the dietitian in the Foothills Region of Medical Services of the Department of National Health and Welfare returned from educational leave, the nutritionist continued to serve as a consultant to the public health nurses in this service. Several projects, including a school lunch program on a reservation and menu planning for a residential school, received assistance.

The nutritionist worked closely with the western diet counsellor of the Canadian Diabetic Association in replying to enquiries about diet exchanges and in the field of professional education on diabetic diets. Publications on diabetes were also received from this agency.

Institutions

It has already been noted that in 1964 it was necessary to curtail the amount of service provided to institutions due to the time required to train office help. However, limited consultant service was given to senior citizens' homes, the Alberta School for the Deaf, Provincial Mental Hospital at Ponoka, and other institutions which do not have a dietitian on their staff. For example, assistance with food costs, menu planning, special diets and quantity recipes was given to 23 institutions. Standardized quantity recipes were again made available quarterly to the Associated Hospitals of Alberta for distribution to its members.

In April, the nutritionist participated in a series of two day institutes on food services presented by the Committee on Education of the Associated Hospitals of Alberta in four centres in the Province. The programs, carried out over a five-day period, commenced in Grande Prairie and moved southward to Edmonton, Calgary, and Lethbridge. A total of 116 food service personnel employed in small hospitals without the services of a dietitian registered for the institutes. At each centre the nutritionist dealt with the topics, "Food Service and Menu Planning" and "The Art of Preparing and Serving Food" in two sessions of one and one-half hours each. To supplement the spoken word Nutrition Services prepared mimeographed materials for distribution to registrants. These included: Menu Suggestions (revised), Sample Selective Menu for a Small Hospital, Accident Prevention, Kitchen Safety, chart showing the recommended temperatures for storage of perishable foods, Suggestions for Quantity Cookery Techniques, Standard Servings of Various Foods. Subsequent to the institutes, these materials have been distributed in response to requests from other institutions.

Educational Services

The growing awareness of the importance of nutrition to the school child is apparent from the increased number of requests from teachers, students and public health nurses for assistance in this field. In the past year, Nutrition Services again served as a resource source for teachers and provided a school service which included supplying animals and instructions for feeding demonstrations, forms for food habit surveys, nutrition pamphlets and posters.

Rat feeding demonstrations in schools continued to prove one of the most effective methods to illustrate the importance of adequate meals and to induce children to change their food habits. This year demonstrations were arranged in 27 schools in the Province, but a number of requests had to be declined because of changes in the mode of transporting express to some areas.

Nutrition Services again made survey records available to the teachers and assisted in scoring the completed records. These results continue to show the needs toward which nutrition education must be directed. The foods most frequently neglected or missing in the children's meals are milk, cheese, fruits and vegetables. As indicated earlier another problem among school children is the excessive consumption of sweet foods such as candy, cake, and soft drinks.

As a center for public information on nutrition for the Province, Nutrition Services maintains an assortment of pamphlets, posters, and exhibits, obtained from various reliable sources which include official and nonofficial agencies. When new nutrition material is received, it is evaluated and if scientifically accurate it is stocked for distribution. As well, some mimeographed materials are prepared directly by Nutrition Services.

During 1964, there were in excess of 75,308 nutrition pamphlets and 5,438 posters distributed on request through the health units or directly from Nutrition Services. In addition a great part of the nutritionist's time was again spent in answering questions, giving information and solving problems received from individuals. Assistance was given on a variety of subjects, including budgets, teflon utensils, artificial sweeteners, acid-alkaline foods, and many others.

A further consultant service was given to church groups, Home and School Associations, 4-H Clubs, Women's Institutes, etc., in selecting and utilizing films and, where possible, in obtaining resource speakers for programs. This type of service was also provided to professional groups such as welfare workers, industrial nurses, university staff and students.

All nutrition films are previewed by a committee representing a cross-section of those who might be using them. Only the films judged to be technically accurate and approved by a majority are recommended for purchase.

A small library maintained by Nutrition Services is still available to public health personnel, the dietary staff in institutions, university students and, in some cases, to the general public. Routine circulation of current nutrition journals to interested persons continued and other publications were loaned upon special request.

Miscellaneous

In addition to the activities already described other responsibilities during the year included the preparation of reports and research materials for various government offices and organizations and attendance at various meetings. The latter included the Advisory Committee for the new Dietary Service Technology Program at the Northern Alberta Institute of Technology. During 1964, the nutritionist also served as chairman of the following: Membership Committee, Canadian Public Health Association (Alberta Division); Nutrition Committee, Canadian Public Health Association; Hotel Liaison and Accommodation For Meetings Committee for the 1965 convention of the Canadian Public Health Association.

The nutritionist attended the meeting of the Dominion-Provincial Nutrition Committee in Ottawa, as well as the joint meeting of the American Institute of Nutrition and the Nutrition Society of Canada in Toronto. These opportunities were refreshing from a professional point of view.

ENTOMOLOGY AND VECTOR CONTROL

J. H. Brown, B.Sc., M.Sc., F.A.P.H.A., M.R.S.H., F.R.E.S. (Lon.),
Director

The Division of Entomology and Vector Control is responsible for the locating of, and the control of arthropod-borne diseases of man and their reservoirs of infection in native small mammals, with particular attention being paid to Rocky Mountain Spotted Fever, Colorado Tick Fever, Bubonic Plague, Tularaemia, Encephalomyelitis, and other less well-known conditions, which are of Public Health importance.

Other problems, such as fly and mosquito control, the use of insecticides, insect infestation in food-stuffs and insect pests of institutions, also fall within the work of the Division. Furthermore, a considerable amount of time is devoted to determining the distribution and species of the insects, ticks and mites that are involved in the transmission of human diseases. A number of other biological problems such as the control of leeches and swimmers' itch, the evaluation of pesticides as a public health hazard and vermin control are also included.

TICK SURVEY

The Rocky Mountain Spotted Fever tick, *Dermacentor andersoni* is well-established in Alberta. Its known and supposed range embraces all of that part of Alberta south of a line from Empress west to Calgary, and thence north and west in the foothills and mountains north to Fort St. John, B.C.

Collections—During 1964 a total of 71 collections were made by host animals with 54 ticks being collected. Some of the collections were submitted to the Rocky Mountain Laboratory at Hamilton, Montana, for testing but the results have not been received. A few collections were sent to the Laboratory of Hygiene, Ottawa, and it is interesting to note that Collection ED 5 made on May 7, 1964, consisting of three female and two male Rocky Mountain Spotted Fever ticks were positive for *Dermacentoxenus richettsia*.

ROCKY MOUNTAIN SPOTTED FEVER

During 1964 there were no reported cases of Rocky Mountain Spotted Fever, although several ticks were taken from the bodies of people by physicians and were submitted by us to the Laboratory of Hygiene, Ottawa, for testing in suckling mice and guinea pigs without finding evidence of disease carriage. However, it is known that infected ticks and reservoirs of infection are present at Medicine Hat, Lethbridge, Milk River, Manyberries, Brooks, Kananaskis and Banff.

Vaccinations—During 1964 a total of 1,741 doses of Rocky Mountain Spotted Fever vaccine were given in the Medicine Hat, Lethbridge, Milk River, Ralston, Manyberries, Brooks, Kananaskis and Banff areas.

Tick Paralysis—No cases were reported during 1964.

PLAGUE SURVEY

Two very large areas of Plague infection, one centering on Hanna and the other on Brooks exist in Alberta, in both of which plague-infected Ground Squirrels (gophers) and plague-infected Ground Squirrel fleas are present in large numbers.

There are 14 species of fleas in Alberta that are capable of transmitting plague from infected animals to man but, fortunately, most of these species are not very numerous, and in many cases their distribution is limited. In 1964 a total of 104 fleas were collected in various areas from 49 small mammals. These were submitted to the Plague Suppressive Measures Laboratory, United States Public Health Services at San Francisco, California, for bacteriological examination. Results have not yet been received.

FLY CONTROL

A program of Fly Control within Health Units was developed during 1964, based mainly on adequate sanitation and proper garbage disposal, and aided by chemical spraying. This program was developed in this Division several years ago and is based on the fact that spraying for fly control in small towns is very costly. The program still appears to be well accepted.

MOSQUITO CONTROL

Mosquitoes did not present a very serious problem in 1964 except in the irrigation areas of southern Alberta. However, they were present in sufficient numbers to constitute a nuisance at most of the summer resort areas. Since the establishment of the Provincial Parks, there has been a very great demand in all parts of the Province for local mosquito control programs, but, unfortunately, mosquito control in such small areas is expensive and ineffective unless a definite long range program embracing a number of such places is undertaken. We still maintain that, with the cost being spread out over a period of years, an exceptionally cheap and effective control can be had.

SCHISTOSOMIASIS—Project 608-7-24

The Public Implications of *Schistosoma dermatitis*

Schistosoma dermatitis, swimmers' itch, was still quite a serious problem during 1964 in many of the new lake-side areas and Provincial Parks that are being opened up. This condition is caused by the penetration of the skin by a small fork-tailed parasite (**cercariae**). In man it always follows bathing or swimming in infested lakes or ponds and is characterized by a localized area of very itchy weals.

Snails, which are the hosts for the cercariae, are sensitive to copper, and under certain conditions, small quantities of it in the water will poison them. As this has to be done at least once a week it becomes an expensive control. This same chemical is also toxic to fish and unless properly applied can have a very adverse effect on the fish population. Furthermore, there is a grave danger that the accumulation of toxic copper in the water will present a hazard to the general public.

The majority of our cases are generally severe and involve the young age-group who do bathing and wading. Young adults and older

persons who swim generally in the deeper water, are not so severely or as often attacked. One interesting development from our study indicates that blond and red-headed persons have a more severe reaction than the darker colored people. This may have something to do with the condition and texture of the skin.

Practically all of the Alberta snails are infested with Schistosome, but the degree of infestation varies within the species depending upon whether the snails were collected from lakes or semi-permanent or permanent sloughs. It was also determined that the abundance of snails could be related to the type, and types, of aquatic vegetation present. This was considered to be highly significant, as a probable snail control could be developed through the destruction of its habitat and food supply.

During 1964 our experience with non-toxic salt compounds indicated that a control could be achieved through the destruction of the vegetation, which, in turn, deprived the snails of food and shelter.

PESTICIDE INVESTIGATION—Project 608-7-72—

Screening for Pesticides in Dairy, Meat, Egg, and
Other Food Products as a Public Health Measure

This investigation in 1964 was supported under the National Health Grants Program as Project 608-7-40 and changed to Project 608-7-72 in March, 1964, and is still carried on in co-operation with the Dairy Bacteriology Laboratory, Department of Agriculture.

The results of the 1964 investigations show a definite increase over positive results with those since 1961 in regard to seasonal variations and indicate that the highest percentage of positives occur during and following the spraying season. The purpose of this study is: (1) to investigate dairy products, meats, eggs, and other food products distributed in Alberta, and to determine the incidence of pesticide residue contamination, (2) to establish the sources of pesticide residue contamination, (3) to determine if the contamination is seasonal, (4) to explore new techniques for pesticide residue determination, and (5) to adapt established procedures for routine use in smaller laboratories.

During the period from April 1, 1964 to October 15, 1964, 23.3 per cent of 300 various food samples examined showed the presence of pesticide residues. While the levels of pesticide residues in fluid milk samples ranged from 0.0017 to 0.03 p.p.m. (on the whole milk basis), the content of residues in other products ranged from a trace to 32.5 p.p.m. The highest level (32.5 p.p.m.) of a single compound was detected in fresh egg yolk, and the compound was identified as DDT.

In order to determine if pesticide residues are confined only to the yolk portion of fresh egg, residue analysis were conducted on egg shell, white and yolk. The results indicated that most of the residues were concentrated in the egg yolk, but an appreciable number of whites and shells also showed pesticide residue contamination.

WESTERN EQUINE ENCEPHALITIS—Project 608-7-25—

The Public Health Implications of
Western Equine Encephalomyelitis in Alberta

During the period from April 1 to October 31, 1964, the results were far greater than anticipated. The mosquito collections, through the use of New Jersey Mosquito Light Traps located at Hanna, Rocky

Mountain House, Wetaskiwin, Stettler, Edmonton, Elk Island Park, Vermilion, Valhalla Centre, Lac La Biche and Edson yielded some 7,700 identified female mosquitoes representing five genera and approximately 30 species. Only the females were identified, as they are incriminated in the transmission of the virus. These collections gave us an excellent sample of the mosquito population in Alberta north of the Red Deer River, as well as the relative abundance of the various species.

1964 COLLECTIONS BY SPECIES AND LOCATIONS

SPECIES	Edmonton	Edson	Elk Island Park	Hanna	Lac la Biche	Rocky Mountain House	Stettler	Valhalla Centre	Vermilion	Wetaskiwin
<i>Aedes</i> sp.	X	X	—	X	X	X	X	X	X	—
<i>A. campestris</i>	—	X	—	X	—	X	—	X	X	—
<i>A. canadensis</i>	—	X	—	—	—	—	—	X	—	—
<i>A. cataphylla</i>	—	X	—	—	—	—	—	X	—	—
<i>A. cinereus</i>	—	—	—	—	—	—	—	X	—	—
<i>A. dorsalis</i> *	X	—	—	X	X	X	—	X	X	—
<i>A. excrucians</i>	—	X	X	—	—	—	—	X	X	—
<i>A. fitchii</i>	X	X	X	—	X	—	X	X	X	—
<i>A. flavescens</i> *	X	X	X	—	X	X	—	X	X	—
<i>A. increpitus</i>	—	—	—	X	—	—	—	X	—	—
<i>A. intrudens</i>	—	X	—	—	—	—	—	—	—	—
<i>A. nigromaculis</i> *	—	—	—	X	—	—	—	—	X	—
<i>A. punctor</i>	—	X	—	—	—	—	—	—	—	—
<i>A. riparius</i>	X	—	X	X	X	—	—	X	—	—
<i>A. spencerii</i>	—	X	X	—	X	X	X	X	X	—
<i>A. stimulans</i>	—	—	—	—	—	—	—	X	—	X
<i>A. sticticus</i>	X	X	—	—	—	—	—	X	—	—
<i>A. trichurus</i>	X	X	X	—	—	—	—	X	—	—
<i>A. vexans</i> *	X	X	—	X	X	X	—	X	X	—
<i>Anopheles</i> sp.	—	—	—	—	—	—	—	—	X	—
<i>Anopheles earlei</i>	—	X	—	X	—	—	—	X	X	—
<i>Culex</i> species	X	—	—	X	—	—	—	—	—	—
<i>Culex tarsalis</i> *	—	—	—	X	X	X	X	—	X	—
<i>Culex territans</i>	X	X	—	—	—	—	—	X	X	—
<i>Culiseta</i> species	X	X	—	X	X	X	—	X	X	—
<i>Culs. alaskaensis</i>	X	X	—	X	—	—	—	X	X	—
<i>Culs. inornata</i> *	X	X	—	X	X	X	—	X	X	—
<i>Culs. impatiens</i>	—	X	—	—	—	—	—	—	—	—
<i>Culs. morsitans</i>	X	—	—	X	—	X	—	X	—	—
<i>Mansonia perturbans</i>	X	X	—	—	—	X	—	—	—	—
Damaged and escaped	X	X	—	X	X	X	X	X	X	—

X - YES

— - NO

*—Indicates Arbovirus Vectors

A.—*Aedes*Culs.—*Culiseta*Mans.—*Mansonia*

Seven Sentinal flocks, each consisting of approximately thirty Light Sussex chickens were placed in the following locations—Rocky Mountain House, St. Paul, Vermilion, Hanna, Grande Prairie, Ardrossan and Valhalla Centre. These chickens were all hatched at the same time, and all bled when about three weeks old at the hatchery. They were then distributed to the co-operators and banded on the wings and legs. These chickens were bled each month through a wing-vein puncture. The bloods were collected by vacutainers and kept under refrigeration until they were delivered to the Virological Section, Provincial Laboratory, Edmonton, to be tested.

Results of the testing showed that the Western Equine Encephalitis virus began to show up in all the flocks about the 1st of August. The flock at Rocky Mountain House also demonstrated the presence of St. Louis Encephalitis virus in that area from June through October.

Approximately 1,207 blood specimens were collected and of these about 900 have been tested.

A total of 30 native animal bloods, and a total of 87 wild bird bloods were also collected during the summer and were sent to the Zoonoses Laboratory, Ottawa, for serological investigations. Of interest was a collection of 40 Little Brown Bats (*Myotis lucifugus*) that were killed through the use of Nembutal, sharp frozen and sent to the Zoonoses Laboratory in Ottawa so that blood, tissue, and ectoparasites could be tested.

There was also a total of 22 blood specimens from random farm flocks of chickens and turkeys, as well as one blood specimen from an apparently ill horse that were collected and presented to the Virological Section for evaluation.

Relatively few cases of Western Equine Encephalitis in horses or humans were reported during 1964 as compared to 1963.

LEECHES

Reports of leech infestations came in from many Alberta lakes during 1964 and appropriate advice was given. It is evident that leeches will become a problem at many of the resort areas being now developed, particularly in regard to the wading areas, and the operators of resort areas are very much concerned over the problem.

HARVEST ITCH

Harvest itch is a skin condition somewhat similar to scabies and is caused by mites. The mites involved are normally on such vegetation as grain and grasses and are accidentally transferred to the person of harvesters and others handling such materials, particularly in the fall and winter. The necessary advice for controlling outbreaks was circulated to the Health Units and local practitioners during 1964. There were no cases reported on Harvest Itch during the year.

INSECTICIDES

Vapourizers are mechanical devices for releasing the fumes of lindane and other insecticides by means of electrical heating elements. Installation regulations under the Canadian Standards Association are used to control their use in food-handling establishments with the result that this problem is decreasing.

In view of the fact that Insecticides, and Pesticides generally, are toxic materials, the Division is being very cautious in making recommendations unless there is sufficient evidence that the materials will be used by competent persons in a proper manner. It should be a matter of great concern when it is realized that there is a vast array of "poisons" now present in every household. There is ample evidence now available to indicate that some regulatory measures regarding the use of pesticides should be introduced. Particular concern is felt in regard to the possible contamination of milk and milk products through the improper use of pesticides on farms, in dairy barns and the places where milk is produced, handled and processed.

On January 1, 1965, the use of Pesticides began under the control of the Division of Industrial Health.

Q FEVER

In 1964 the Q Fever Survey was carried on in co-operation with the Provincial Laboratory of Public Health and the Dairy Bacteriology Laboratory, Department of Agriculture, and demonstrated the presence of the organism in dairy herds in various parts of the Province.

The following are the results obtained for milk samples received at the Provincial Dairy Laboratory for the period from February 1, 1964 to December 31, 1964.

SAMPLES TESTED	
Total Number of Samples Tested	4,289
Negative Samples	3,853
Positive Samples	436
% Positive Samples	10.165

SOURCE OF SAMPLES			
	Total	Negative	Positive
Edmonton Milk Shed	251	246	5
Lethbridge-Medicine Hat	754	502	252
Calgary Milk Shed	314	277	37
All Other Samples	2,970	2,828	142
(Cheese Plants, Condensery, etc.)			

HERDS TESTED	
Total number of individual herds tested	1,435
Negative herds	1,324
Positive herds	111
% positive herds	7.735

SOURCE OF HERDS TESTED				
	Total	Negative	Positive	% Positive
Edmonton Milk Shed	104	100	4	3.846
Lethbridge-Medicine Hat	106	69	37	34.91
Calgary Milk Shed	168	145	23	13.69
All Other Herds	1,057	1,010	47	4.446
(Cheese Plants, Condensery, Etc.)				

As for previous years, it still is observed that once a herd becomes infected, it usually remains infected.

LABORATORY

Insect Identification—During 1964 numerous specimens of insects from different products and places were received for identification. Insects from tropical and semi-tropical areas continue to be found in Alberta. From the increase in their numbers, and as they are plant-eating insects, it would appear that they may be directly connected with the vanning-in of fruit and vegetables. Suitable information for control measures was supplied and the local Sanitary Inspectors were notified in each case.

Insect Collections—Good progress was made in 1964 in arranging the collection of insects and ticks injurious to human health.

Water Samples—During 1964 many samples of water were sent in from the Health Units from reservoirs, tap water, etc., and found to contain Algae, Chromogenic bacteria, and small aquatic insects. Information for checking these conditions was given by letter.

STAFF

During 1964 the usual field investigations, and the investigations related to Projects 608-7-24, 608-7-25, 608-7-72, were carried on under the direction of J. H. Brown, M.Sc., Director, Entomology and Vector Control, by R. L. Kochendorfer, B.Sc., Biologist, who resigned August, 1964, to resume his studies in Medicine at the University of Alberta. John A. Marken, B.Sc., became Biologist in November, 1964.

The usual educational work in regard to the control of insect-borne diseases was carried out by means of radio, television, motion pictures, newspapers and lectures. The usual lectures to the 3rd Year Medical Students, Public Health Nurses and Nurses-in-Training were given, and in some cases, expanded. A series of lectures were given to the students taking the "Health" course in the Faculty of Education.

PROVINCIAL POISON CONTROL SERVICES

**J. H. Brown, B.Sc., M.Sc., F.A.P.H.A., M.R.S.H., F.R.E.S. (Lon.),
Director**

INTRODUCTION

During 1964 there were 108 Poison Treatment Centres in Alberta, along with the two Poison Information Centres—one in the University Hospital, Edmonton, and the other in the General Hospital, Calgary, established to service Northern and Southern Alberta respectively, functioned as usual with an increasing number of requests for information on new toxic substances and/or treatment for complicated poisonings.

During 1964 the office of the Poison Control Services received a total of 3,564 Individual Poisoning Reports. These Reports were coded, punched and made up into monthly statements showing the age, sex, and address of the individual involved, as well as the location where the incident occurred, the substance involved, the treatment given and the final outcome. These monthly reports were compiled on a quarterly basis and a short form was mimeographed and mailed to each practising physician, pharmacist and to each hospital in the Province.

RESULTS FOR 1964

During 1964 a total of 3,564 cases including deaths, were reported. Of these 1,740 were males and 1,824 were females. The deaths among the reported cases were 29 males and 14 females making a total of 43 deaths, or a fatality rate of approximately 1.2 per 1,000 reported poisonings; this rate is in accord with the findings elsewhere. In 1964 the Bureau of Vital Statistics reported 24 deaths occurring outside of hospitals.

REPORTING

For purpose of reporting eight (8) Categories were established covering the substances in common use. These Categories are:

A. Drugs and Medications for External Use—which embraces antiseptics, liniments, cosmetics, salves, etc.

B. Drugs and Medications for Internal Use—which covers aspirins, Baby's Own and Ex-Lax, sedatives and sleeping pills, cough syrups, prescription drugs, etc.

C. Household Chemicals—which includes cleaners, detergents, lye, polishes, waxes, solvents and varsol, etc.

D. Industrial, Auto & Fuel—such as gas (CO), industrial products, gasoline, etc.

E. Poisonous Plants & Venomous Animals—which covers berries and plants, toadstools, etc.

F. Pesticides—which includes insecticides, moth balls, rodenticides, weedicides, etc.

G. Tobacco & Alcohol—which covers ethyl alcohol, and tobacco.

H. Miscellaneous—embracing substances difficult to categorize.

RELATIONSHIP OF AGE TO POISONING

AGE-GROUP BELOW 5 YEARS

In examining the Tables it becomes apparent that age and poisonings are directly linked. The fact that 2,678 of the total reported poisonings occurred in the Age-Group 0 to 4 (actually 75.1 percent), is ample evidence that this age-group needs almost constant supervision. While this information, in relation to poisonings, extends and amplifies this need, it has long been recognized by parents, physicians, nurses and other persons concerned with the care of children that this age-group, through its adventurous proclivities in seeking, climbing, tasting and exploring, was accident-prone. It is interesting to note that of the poisonings 1,484 including deaths occurred in males and 1,194 in females. There were no male deaths and 2 females, with the rate being 4.7 percent of the total deaths.

AGE-GROUP 5-14

In this age-group there were 144 poisonings with 80 males and 64 females including deaths. There was no male death and 1 female death. This age-group accounted for only 4.4 percent of the total poisonings. It is interesting to note that while the males in the 0 to 4 age-group accounted for 1,484 of the total poisonings in the age-group, the males in the 5-14 age-group accounted for 80 of the total poisonings. The 1 death was 2.3 percent of the total deaths.

AGE-GROUP 15-24

In this age-group there were 312 poisonings with 82 being males and 230 being females, including deaths, with the females accounting for the largest percentage of the poisonings. The poisonings in the age-group accounted for 8.8 percent of the total poisonings. There were 3 male deaths and 2 females, making a rate of 11.6 percent of the total deaths.

There has been a suggestion made that poisonings in the age-group 15-24 may not be accidental in its true sense, however, our experience shows that most of the incidents are accidental, generally being due to carelessness in not reading directions or understanding what the particular substance was designed to do.

AGE-GROUP 25-44

This age-group accounted for 285 or 7.9 percent of the total poisonings. Here again the females are in the lead with 179 of the total poisonings in this age-group and 106 males including deaths by poisonings. In examining the data, it is easily seen that a large proportion of the 179 cases were associated with Drugs and Medications for Internal Use. On the face of it this indicates that there may have been some abuse in the use of such drugs and medications. It should be sufficient to indicate that the great profusion of Drugs and Medications for Internal Use, available not only in drug stores but also in other retail outlets, and the carelessness with which such materials are handled in the home, could easily account for a large proportion of the poisonings being definitely accidental. The mere fact that most of the victims were females only supports the well known fact that the females, mostly mothers, are more commonly in the home and are subjected to stresses and strains which the male escapes. The 13 male and 1 female deaths accounted for 32.6 percent of the total deaths.

AGE-GROUP 45-UP

The poisonings in this age-group are 145 or 4.7 percent of the total poisonings reported. Of these 72 involved males and 73 females, including deaths. Here again Drugs and Medications for Internal Use were in the lead, with the other cases being approximately evenly distributed amongst the other categories. Information gathered in relation to a number of these cases shows that many of them involved elderly persons, and it is entirely reasonable to assume that the confusion associated with illness and/or age caused either a mistake in identity of medications or an overdose of the particular product involved. The 13 males and 8 female deaths were 48.8 percent of the total deaths.

SUMMARY

In summarizing poisonings by age-groups, a further examination of Table II indicates that the group 0-4 accounts for 2,678 of the total 3,564 poisonings. The age-group 5-14 accounts for 144 cases of poisonings. In the age-group 15-24 there were 312 of the total poisonings, while in the age-group 25-44 there were 285 of the total. The age-group 45 and up accounted for 145 poisonings. However, an examination by sex shows that in the age-group 0-4 and 5-14, the males were the most common. In the age-group 15-24 and 25-44, and 45 and up, the females predominated.

ALL POISONINGS BY AGE-GROUPS & SEX

An examination of the Tables discloses the fact that there is a definite relationship between the months and the number of poisonings occurring in each age-group. In a climate such as ours this relationship can be associated, particularly in the 0-4 age-group, with the season of the year and type of weather prevailing.

While it would appear that certain months have a higher number of poisonings than others, it should be borne in mind that there is an enormous variety of substances which readily lend themselves to causing poisonings, and while there is ample evidence that Drugs and Medications for External Use, Drugs and Medications for Internal Use and Household Chemicals are the most available source for poisonings, there are many other poisons which under certain conditions become just as readily available.

The following Tables present the results in statistical form:

TABLE I
POISONINGS (INCLUDING DEATHS), FOR ALL AGE-GROUPS, BY SEX, AND TOTALS,
FOR EACH MONTH, 1964

Months	All Categories Cases			Deaths		
	M	F	T	M	F	T
January	130*	146*	276*	10*	3*	13*
February	159*	124	283*	2*	....	2*
March	155*	168*	323*	3*	2*	5*
April	157*	130*	287*	4*	3*	7*
May	162*	174	336*	2*	....	2*
June	155	138*	293*	....	1*	1*
July	149*	126*	275*	1*	1*	2*
August	146*	157	303*	1*	....	1*
September	171	156	327	....	....	....
October	173*	163*	336*	5*	4*	9*
November	167*	126	293*	1*	....	1*
December	100	132	232	....	....	....
Totals	1824*	1740*	3564*	29*	14*	43*

*Deaths included in "All Categories" columns. This list of deaths from poisonings should not be regarded as official for Alberta for 1964.

TABLE 1A
DEATHS FROM POISONINGS OCCURRING OUTSIDE HOSPITALS AND REPORTED BY
THE BUREAU OF VITAL STATISTICS —LISTED BY AGE-GROUP, SEX, SUBSTANCE
AND CATEGORIES—FOR 1964

		0 - 4		5 - 14		15 - 24		25 - 44		45 - Up		Total	
		M	F	M	F	M	F	M	F	M	F	M	F
CATEGORIES													
B. Drugs and Med.													
For Int. Use:													
Aspirin		0	1*	0	0	0	0	0	0	1	0	1*	1*
Barbiturates		0	0	0	0	0	1*	0	0	0	2*	0	3*
Sedative		0	0	0	0	0	0	0	0	0	1	0	1
C. Household Chemicals:													
Carbon													
Tetrachloride		0	0	0	0	0	0	1	0	0	0	1	0
D. Industrial,													
Auto and Fuel:													
Carbon Monoxide....		0	1*	0	1*	3*	1	10*	1	9	3*	22*	7*
Natural Gas		0	0	0	0	0	0	0	0	1	0	1	0
F. Pesticides:													
Rodenticide		0	0	0	0	0	0	0	0	0	1*	0	1*
G. Tobacco and Alcohol:													
Alcohol		0	0	0	0	1	0	2*	0	1	0	4*	0
H. Miscellaneous:													
Undetermined		0	0	0	0	0	0	0	0	0	1	0	1
Totals		0	2*	0	1*	4*	2*	13*	1	12*	8*	29*	14*

*DIED—Including those who died outside hospital and reported by Bureau of Vital Statistics.

TABLE II
POISONINGS (INCLUDING DEATHS), IN EACH AGE GROUP, BY SEX AND TOTALS FOR ALL CATEGORIES BY MONTHS—1964

Months	0 - 4		5 - 14		15 - 24		25 - 44		45 and Up		All Age Groups		Deaths	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
January	100	92	1	6	7	7	12*	10*	9*	19*	130*	146*	10*	3*
February	131	84	8	7	10	15	4	6*	...	6*	159*	124	2*	...
March	120	121	8	4*	14*	16	7	6	10*	16*	155*	168*	3*	2*
April	131	87	8	7	3	19	11*	4*	5*	9*	157*	130*	4*	3*
May	126	114	13	7	20	32	12*	5	4	9	162*	174	2*	...
June	135	96	9	5	14	21	5	1	4*	5*	155	138*	...	1*
July	125	91	9	1	4	17*	6*	12	5	10	149*	126*	1*	1*
August	116	102	9	6	7	18	11*	3	6	9	146*	157	1*	...
September	145	113	7	8	15	14	6	5	7	12	171	163*	...	9*
October	141	118*	5	6	6*	16*	12*	9*	8*	17*	173*	126	5*	4*
November	141	86	1	4	11	17	19*	10	8	18	167*	293*	1*	...
December	73	90	2	3	6	18	11	8	7	15	100	132	...	...
TOTALS	1484	1194*	80	64*	82*	230*	106*	72*	73*	145*	1824*	1740*	29*	14*
% of Total Poisonings	75.1	4.4	8.8	7.9	4.7	51.2	48.8	43*	...	...	...	...	...	...
*Indicates one or more deaths included														
Deaths	...	2*	...	1*	3*	2*	5*	13*	8*	21*	29*	14*	43*	...
% of Deaths	4.7	2.3	11.6	32.6	48.8	67.4	32.6	48.8	67.4	32.6	48.8	67.4	32.6	...

TABLE III
POISONINGS (INCLUDING DEATHS), BY SEX AND TOTALS FOR ALL AGE-GROUPS FOR EACH CATEGORY BY MONTHS—1964

Months	Category A			Category B			Category C			Category D			Category E			Category F			Category G			Category H			Totals			Deaths			
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	
January	6	9	15	66*	98	164*	20	20	40	25*	13*	38*	1	...	1	4	2	6	4*	...	4*	4	4*	8*	130*	146*	276*	10*	3*	13*	
February	17	8	25	76	80	156	34	21	55	14*	7	21*	...	...	...	8	7	15	3	...	3	7	1	8	159*	124	283*	2*	...	2*
March	15	9	24	89	114	203	27	30	57	12*	4*	16*	...	...	...	5	7	12	6*	1	7*	1	3	155*	168*	323*	3*	2*	5*	
April	13	11	24	80	84*	164*	35	17	52	8*	5*	13*	...	...	...	9	6*	15*	4	2	6*	7	5	12	157*	130*	287*	4*	3*	7*
May	11	12	23	84	118	202	32	20	52	11*	2	13*	4	4	2	13	14	27	3	1	4	5	9	162*	174	336*	2*	...	2*		
June	9	2	11	81	93*	174*	31	18	49	10	5	15	2	2	2	10	16	26	...	...	...	12	4	16	155	138*	293*	...	1*	1*
July	12	5	17	64	85	149	43	18	61	11*	4*	15*	4	4	1	12	8	20	1	1	2	4	6	149*	126*	275*	1*	1*	2*		
August	8	7	15	67	105	172	38	27	65	18*	5	23*	5	4	9	6	5	11	1	...	1	3	4	7	146*	157	303*	1*	...	1*	
September	19	6	25	91	113	207	36	19	55	11	2	13	...	2	2	11	4	15	1	...	1	2	7	9	171	156	327	...	...	...
October	8	5	13	98	118*	216*	42*	18	60*	12*	7*	19*	...	...	...	9	10	19	2	1	3	1	4	5	173*	163*	336*	5*	4*	9*
November	8	7	15	107	77	184	31	24	55	9*	5	14*	1	1	...	3	5	8	1	...	1	7	8	15	167*	126	293*	1*	...	1*	
December	9	7	16	51	84	135	17	28	45	16	4	20	1	1	2	2	3	5	1	...	1	3	5	8	100	132	232	...	...	...
Totals	135	88	223	954*	1172*	2126*	386*	260	646*	157*	63*	220*	20	11	31	92	87*	179*	27*	6	33*	53	53*	106*	1824*	1740*	3564*	29*	14*	43*	
% of Cases			6.3			59.7			18.1			6.2	0.9					5.0			0.9			2.9		51.2	48.8				
Deaths	1*	5*	6*	1*	...	1*	23*	7*	30*	1*	1*	4*	...	4*	...	1*	1*					29*	14*	43*
% of Deaths			0			13.9			2.3			69.8				2.3			9.3			2.3				67.4	32.6		

*Indicates one or more deaths included

DIVISION OF MEDICAL SERVICES

P. B. Rose, M.D., Director

CYSTIC FIBROSIS

In May, 1964, a new program was launched which provides the antibiotic drugs and pancreatic enzyme necessary for the treatment of children suffering from this condition.

The child is registered on the program by his physician using criteria established by the Special Drugs Advisory Committee. The drugs are provided free of charge and without a means test up to the eighteenth birthday.

At 31st December, 1964, a total of 57 children were receiving these drugs and the total expenditure to that date was \$3,579.20.

This program is proving to be valuable in bringing to light previously unknown cases of the disease, since the known cases at its onset numbered 46.

EMERGENCY HEALTH SERVICES

This organization is responsible to the Minister of Health through the Medical Services Division.

It has two functions:

1. To establish a system of Emergency Health Services throughout the whole Province to meet with a National Emergency and to provide the necessary medical care for the maximum portion of the population.
2. To assist and advise each Active Treatment Hospital in the Province to have a disaster plan to meet with any natural disaster and to test the validity and efficiency of this plan.

All Alberta hospitals have been contacted and advice and literature useful in their planning have been given to them. One hundred hospitals were visited during 1964. Sixty hospital disaster plans have been exercised. Five Nurses' Orientation courses attended by 150 nurses were held. Three courses for Nursing Aides were held. Two day conferences were held for doctors, dentists, pharmacists and veterinarians in Calgary and Edmonton respectively. Four Hospital Disaster Institutes with delegates from all hospitals attending one or more of the institutes were held. Lectures were given at all Nursing Schools in the Province. Lectures were given to other interested groups. A program to store twenty Emergency Hospitals and twenty-three Advanced Treatment Centres has been initiated.

The staff consists of Dr. R. A. Duncan, Director, a pharmacist supplies officer, two nurse consultants and two clerical staff.

JUVENILE AMPUTEE CLINIC

This clinic replaces the previously named "Special Handicapped (Thalidomide Type) Infants' Program".

As well as continuing to look after the six infants showing thalidomide type deformities, any infant or child up to the eighteenth birthday,

suffering from an amputation, congenital or traumatic, may be seen, and any necessary prosthetic limb is provided.

The augmented clinic commenced operation in June, 1964. At the end of December, 1964, 34 children had been seen and prosthetic devices costing \$6,946.49 had been provided.

ALBERTA MEDICAL PLAN

After some months of co-operative planning by Government, members of the College of Physicians & Surgeons of Alberta, representatives of Medical Services (Alberta) Incorporated and of the Canadian Health Insurance Association, the Alberta Medical Plan began operation on October 1st, 1963. The administrative aspects of the plan became a function of the Medical Services Division.

The plan is a comprehensive one, providing one level of medical benefits in a basic standard contract. Physicians' services, laboratory services and diagnostic aids, in and out of hospital, are provided. After a waiting period, maternity benefits, annual check-ups and psychiatric treatment are provided.

The comprehensive contract is guaranteed renewable for the lifetime of the participant, and provides for a waiver of premium for a period of up to six months in the event of sickness or disability.

The Government provides a subsidy to Alberta residents in two categories, in the amounts shown below:

- A. Those who had no taxable income during the preceding calendar year—

Single Individual	\$18.00 per year
Married Couple	\$42.00 per year
Family of Three or More	\$72.00 per year

- B. Those whose taxable income was not over \$500.00 during the preceding year—

Single Individual	\$ 9.00 per year
Married Couple	\$21.00 per year
Family of Three or More	\$36.00 per year

The maximum premiums that can be charged were established by Regulation and are:

Single Individual	\$ 5.25 per month
Family of Two Persons	\$10.50 per month
Family of Three or More	\$13.25 per month

During 1964 the Plan showed steady growth and general acceptance by the people of Alberta. The enrollment figures, as at December, 1964, showed a total enrolled under the Plan in excess of 800,000 of whom 181,795 were receiving subsidy. A total of \$2,733,750.00 was spent in subsidizing the cost of the health insurance of the two categories noted above.

REGISTRY FOR HANDICAPPED CHILDREN AND ADULTS

This Registry commenced operation on September 1st, 1963, in this Division, and it is planned to eventually provide a complete register of all handicapped persons in the Province and, in addition, to function as a referral, information and research centre. Initially, Health Units of the Province were approached and all are enthusiastically co-operating in registering the handicapped known to them. Through the Alberta

Council for Crippled Children and Adults an approach has been made to all voluntary agencies dealing with the handicapped. In addition, working with the Division of Vital Statistics and using the Notification of a Live Birth or Stillbirth Form, a register of birth abnormalities is being compiled.

During 1964 much help has been given by Health Units, voluntary organizations and the medical profession. Approximately 7,000 persons have been registered to December, 1964.

DIABETIC DRUG PROGRAM

The Department of Public Health continued to provide without charge, insulin, to diabetic patients who are residents of Alberta. This program first came into operation in 1927 and is provided under a "means test". The patient makes his application through his own physician. In 1959 the program was expanded to provide an oral hypoglycemic medication "tolbutamide" for those persons capable of being treated with tolbutamide instead of insulin. In June, 1962, the program was further expanded to provide "phenformin" for those patients in whom it was demonstrated that better control could be achieved. Several patients are being treated with combinations of these drugs.

TABLE 1
PERSONS USING INSULIN, TOLBUTAMIDE AND PHENFORMIN

Year	Insulin	Tolbutamide	Phenformin	Total
1959	314	81	....	395
1960	334	188	....	522
1961	345	272	....	617
1962	321	362	22	705
1963	342	445	51	838
1964	374	478	65	917

PHENYLKETONURIA THERAPY PROGRAM

In 1960 the treatment of phenylketonuria was brought under the Special Drug Program of this Division. Phenylketonuria is a congenital defect found in a very small percentage of newborn infants which prevents the proper metabolizing of certain foods. This results in mental deficiency if not treated early and with special dietary preparations. These preparations are provided free. Altogether, 13 children have received this dietary preparation and 10 are presently active on the program.

RHEUMATIC FEVER PROPHYLAXIS

This program was started in June, 1958, has now been in operation for six and one-half years, and was continued throughout the year on the same basis as previously reported.

TABLE 2

Year	Applications Approved and first supply sent	Follow-up Supplies
1958*	494	250
1959	433	1,545
1960	391	2,933
1961	383	2,708
1962	336	3,518
1963	266	3,953
1964	334	3,991
	2,637	18,898

*Figures are for June 30th, 1958, to December 31st, 1958 only.

During the past six and one-half years that the program has been in operation, a total of 2,637 applications have been approved and 18,898 follow-up supplies requested and sent. To the end of December, 1964, a total of 405 patients have been suspended by reason of having reached the age limit for the program, the eighteenth birthday. A preliminary review of renewal forms received in the past twelve months indicates a total of 46 recurrences reported by doctors, 14 of these recurrences are adjudged to be serious.

For approved patients 200,000 units of penicillin twice daily is provided. For those patients who are sensitive to penicillin, an alternative prophylactic medication, triple sulpha, can be provided, the dosage being one 7½ gr. tablet twice daily. There are presently 30 patients receiving this treatment and of this total, 10 developed sensitivity since coming under the prophylactic program.

EMERGENCY AIR AMBULANCE SERVICE

This service has been in operation for six years and during the twelve-month period ending December 31st, 1964, provided 96 flights. Seriously ill patients living in inaccessible areas are transported to hospital in the two larger cities. If the patient can be transported satisfactorily by car, ambulance or rail, the air service is not available.

TABLE 3

Year	Flights	Patients	Adults	Children	Premature Infants
1959	55	53	....	....	....
1960	44	52	32	20	....
1961	50	50	31	19	13
1962	76	83	50	33	14
1963	76	78	51	27	5
1964	96	107	63	44	3

Premature Infant Totals Included with Children

POLIOMYELITIS TREATMENT PROGRAM

Under the provisions of The Poliomyelitis Sufferers Act and Regulations, residents of Alberta who suffer from poliomyelitis and its subsequent effects may obtain such treatment services as in-hospital medical services subsequent to the acute fourteen-day isolation period, surgical services, and respirator care where indicated, from the day of onset of the disease. Orthopaedic appliances are provided. Out-patient physiotherapy, muscle tests, and radiological examinations and other assessment procedures are also available. Out-patient speech therapy and occupational therapy may be provided.

Admissions to hospital, and hospital days, are as follows:

TABLE 4
HOSPITAL ADMISSIONS 1961-1964

Year	New Admissions	Re-admissions	Total
1961	88	212	300
1962	53	151	204
1963	48	168	216
1964	28	142	170

HOSPITAL DAYS 1961-1964

Year	Isolation	Post-Isolation	Respirator	Total
1961	263	16,170	7,572	24,005
1962	34	6,040	6,895	12,969
1963	6	5,830	6,382	12,218
1964	nil	4,211	5,474	9,685

TABLE 5
PROVINCIAL EXPENDITURES FOR POLIOMYELITIS TREATMENT
SERVICES 1961-1964

Expenditure	1961	1962	1963	1964
Post-Isolation Days @ 60¢	\$ 9,702.00	\$ 3,624.00	\$ 3,498.00	\$ 2,526.60
Respirator Days @ \$2.00*	15,144.00	12,790.00	12,764.00	8,895.50
Surgical Procedures	27,631.30	20,316.50	22,265.35	21,724.95
Medical Advisor	2,400.00	2,400.00	2,400.00	2,400.00
Appliances and Out-Patient Services	47,609.03	36,911.66	41,112.90	47,005.26
Home Care Program	21,519.28	23,942.13	334.00	.....
Total	\$124,005.61	\$ 99,984.29	\$ 82,374.25	\$ 82,552.31

*The fee for Respirator Days was reduced to \$1.50 per day effective 1st April, 1964.

TABLE 6
APPLIANCES AND OUT-PATIENT SERVICES 1961-1964

Services	1961		1962		1963		1964	
	No.	Expendi- ture	No.	Expendi- ture	No.	Expendi- ture	No.	Expendi- ture
IN-PATIENT Appliances	773	\$34,170.55	801	\$27,525.61	803	\$30,296.91	681	\$20,441.69
OUT-PATIENT Appliances	49	4,219.63	45	3,229.25	64	5,826.39	314	21,358.13
Physiotherapy	1,903	6,126.10	945	2,826.75	785	1,878.20	665	1,897.00
Muscle Tests	42	163.25	58	191.75	34	128.50	31	125.50
Radiology .....	.....	2,774.50	.....	3,030.50	.....	2,812.00	.....	2,946.00
Other (Cast Room, etc.) .....	.....	155.00	.....	107.80	.....	170.90	.....	236.94
Total .....	.....	\$47,609.03	.....	\$36,911.66	.....	\$41,112.90	.....	\$47,005.26

The incidence of poliomyelitis continued to decrease in 1964. The total number of new admissions to hospital in 1964 was 58.3% of the 1963 total. Re-admissions were 84.5% of the 1963 total. Operative procedures in 1964 totalled 164 compared to 175 in 1963. Post-isolation care was provided in the University of Alberta, Alberta Children's and the Calgary General Hospitals. There were no expenditures for equipment under the Home Care Program for 1964, however, arrangements are being made to provide equipment for a number of patients during 1965, including patients who have not had equipment previously.

TREATMENT SERVICES FOR SOCIAL SERVICE RECIPIENTS

The Treatment Services Act provides for treatment services for the Social Services Group. The services provided are medical, dental, optical and chiropractic. Certain limited services such as physiotherapy and podiatry are also provided but require prior approval by the Medical Services Division.

Complete hospitalization is provided by the Division of Hospital Services under The Hospitalization Benefits Plan.

During 1961 the Department of Public Welfare introduced Social Allowance and Social Assistance; for statistical purposes therefore, pensioner groups are divided as follows:

Group A—Over 60 years of age.

Group B—Persons in receipt of Blind and Disability Pensions.

Group C—Under 60 years of age.

Group D—Government Wards added to the Social Services Group, November, 1961.

Group E—Aid to Dependent Children added to the Social Services Group, April, 1964.

TABLE 7
SOCIAL SERVICE RECIPIENTS AS OF DECEMBER 31st, 1962, 1963, 1964

Categories	Recipients			Spouses			Dependent Children			Total		
	1962	1963	1964	1962	1963	1964	1962	1963	1964	1962	1963	1964
A	29,474	28,938	28,908	3,689	3,642	3,738	985	1,059	1,100	34,148	33,639	33,746
B	5,695	6,268	7,036	1,378	1,567	1,810	2,499	2,914	3,524	9,572	10,749	12,370
C	3,542	4,056	4,694	15	31	63	9,189	11,058	13,332	12,746	15,145	18,089
D	3,289	3,489	3,489	....	....	....	....	....	....	3,289	3,489	3,489
E	....	....	186	....	....	....	....	....	....	....	....	186
	42,000	42,751	44,313	5,082	5,240	5,611	12,673	15,031	17,956	59,755	63,022	67,880

In 1964 total social service recipients increased by 4,858 over 1963.

The average number of recipients in the Province during the calendar year 1964 was 65,455, an increase of 4,005 over 1963. Provincial expenditures for treatment services for social service recipients in the calendar years 1963 and 1964 were \$2,080,490.96 and \$2,211,137.39 respectively, showing an increase in 1964 of \$130,646.43.

The per capita expenditure for the group in 1964 was \$33.78 as compared to \$33.87 in 1963. Per capital payment to the College of Physicians and Surgeons was \$24.00 per year, to the Alberta Dental Association \$6.36 per year and \$1.20 per year to the Alberta Chiropractic Association.

TABLE 8
PROVINCIAL EXPENDITURES BY TYPE OF SERVICE—
CALENDAR YEARS 1963-1964

Type of Service	1963	1964	Increase or Decrease
Medical Care	\$1,474,790.00	\$1,570,292.00	+ 6.48%
Dental Care	376,373.67	416,127.38	+10.56%
Optical and Optometric Services	157,731.39	149,070.61	— 5.49%
Chiropractic Services	69,661.90	74,235.40	+ 6.56%
Other Treatment Services	1,934.00	1,412.00	—26.99%
Total	\$2,080,490.96	\$2,211,137.39	

1. Medical Care for Social Service Recipients

Through an agreement between the Department of Public Health and the College of Physicians and Surgeons of Alberta, the practising members of the College provide complete medical care for the Social Service Recipient Group. The payment is \$24.00 per capita per year on a basis of \$2.00 per capita per month.

These monies are placed in a Pensioners' Medical Fund and are administered by the College. Administrative costs in the fiscal year April 1st, 1964 to March 31st, 1965, was 4% of the assessed value.

Individual doctors' accounts are assessed according to the College's minimum schedule of fees, and an initial payment of 50% is made. The remainder of the fund is pro-rated at the end of the fiscal year according to the assessed value of the accounts submitted, and a further payment is made.

In 1964 the payment was 62% of the assessed value of the accounts received. The difference is a sizeable personal contribution made to the medical care of social service recipients by the doctors of Alberta.

In 1964 the Province expended \$1,570,292.00 for medical services as compared to \$1,474,790.00 in 1963. This represents an increase of 6.48%.

DEPARTMENT OF PUBLIC HEALTH

TABLE 9
SOCIAL SERVICE RECIPIENTS' MEDICAL SERVICES UTILIZATION
April 1st, 1964 - March 31st, 1965

Type of Service	Recipient		Spouse		Child	
	No. of Services	Fee	No. of Services	Fee	No. of Services	Fee
GROUP "A"						
Office:						
First	3,521	\$ 21,407.00	374	\$ 2,453.00	142	\$ 906.00
Minor I	27,959	112,857.50	3,764	15,002.00	1,927	7,763.00
Repeat	51,604	138,608.00	5,533	15,479.00	1,278	3,541.00
Referred	335	1,615.00	50	201.00	9	40.00
House	13,114	56,953.00	807	3,377.00	260	1,283.00
N.H.E.	3,637	25,708.50	242	1,791.50	118	850.00
Detention Fee	124	789.00	26	120.00	3	11.00
Hospital—Active	178,265	344,671.00	11,150	24,518.00	2,639	6,494.00
Referred	5,444	18,118.00	442	1,604.00	163	486.00
Chronic	25,276	46,264.00	312	609.00	20	40.00
Mileage	413	3,332.50	27	144.00	1	.....
Certificate	122	686.00	10	61.00	1	10.00
Consultation	3,901	61,516.50	355	5,174.00	111	1,638.00
Laboratory	16,021	35,754.25	1,968	4,447.25	457	957.00
Minor Procedures	3,998	4,843.00	457	495.00	97	89.00
Obstetrics and Gynaecology	199	15,286.50	69	5,392.00	13	880.00
General Surgery	4,098	124,328.36	480	16,690.33	226	4,292.33
Ortho. Surgery	784	62,791.66	58	2,737.00	47	1,977.50
Neuro. Surgery	66	3,048.50	19	750.00	8	115.00
Urolo. Surgery	944	46,611.50	23	1,110.00	11	120.00
Otolaryngology	426	5,725.66	36	1,199.85	127	3,539.00
Eye	2,191	53,976.50	236	4,704.00	148	1,728.00
Plastic Surgery	44	2,382.00	4	215.00	8	775.00
Internal Medicine	3,021	25,497.50	260	2,395.00	20	225.00
Psychiatry	709	6,258.50	77	689.00	66	608.50
Paediatrics	5	65.00	1	15.00	31	289.00
Dermatology	905	3,368.00	92	281.00	226	786.50
Physiatry	10	77.00	1	10.00	2	20.00
X-Ray	6,656	72,348.00	892	10,607.50	264	2,276.00
Anaesthesia	2,814	51,437.00	305	5,850.00	183	3,051.00
Surgical Assistant	556	10,191.25	73	1,413.00	19	354.00
Totals	357,162	\$1,356,816.18	28,143	\$ 129,534.43	8,625	\$ 45,144.83
Average cost per service		\$3.80		\$4.60		\$5.23
Average cost per individual covered		\$3.95		\$2.91		\$3.51
GROUP "B"						
Office:						
First	765	\$ 4,425.00	172	\$ 1,185.00	125	\$ 803.00
Minor I	6,997	27,623.00	1,806	7,553.00	2,084	8,728.00
Repeat	13,237	35,671.00	2,450	6,681.00	1,316	3,561.00
Referred	116	540.00	12	58.00	.....	.....
House	2,307	7,156.50	208	839.50	249	943.50
N.H.E.	539	3,896.50	83	647.00	176	1,095.00
Detention Fee	134	889.00	4	140.00	.....	.....
Hospital—Active	29,888	60,599.50	3,729	8,173.00	3,324	8,219.00
Referred	1,286	4,464.50	218	550.50	75	188.50
Chronic	5,097	8,650.00	21	42.00	.....	.....
Mileage	43	379.00	8	38.00	3	.....
Certificate	23	155.00	.....	.....	.....	.....
Consultation	1,034	15,069.00	163	2,209.00	100	1,220.00
Laboratory	4,085	9,641.00	734	1,772.00	499	1,146.50
Minor Procedures	1,025	1,314.50	163	165.00	102	89.00
Obstetrics and Gynaecology	103	6,325.00	117	8,394.00	5	282.00
General Surgery	1,075	38,993.01	266	7,927.00	254	4,035.00
Ortho. Surgery	219	17,653.50	24	1,935.00	49	2,080.50
Neuro. Surgery	62	3,041.35	18	475.00	5	75.00
Urolo. Surgery	124	6,465.00	17	450.00	11	425.00
Otolaryngology	106	3,618.50	19	326.00	137	2,959.50
Eye	410	7,522.00	130	1,334.00	143	2,351.00
Plastic Surgery	32	1,645.00	2	212.50	4	275.00
Internal Medicine	582	4,484.00	63	608.50	17	147.50
Psychiatry	434	3,961.00	62	518.50	115	835.00
Paediatrics	.....	.....	.....	.....	21	204.00
Dermatology	398	1,254.50	90	231.00	157	514.50
Physiatry	5	55.00	.....	.....	1	10.00
X-Ray	1,736	18,855.00	321	3,793.00	260	2,362.50
Anaesthesia	795	19,092.50	154	3,998.00	158	2,665.00
Surgical Assistant	176	3,361.00	29	698.00	11	218.00
Totals	72,863	\$ 316,799.86	11,083	\$ 60,953.50	9,401	\$ 45,433.00
Average cost per service		\$4.35		\$5.49		\$4.83
Average cost per individual covered		\$3.92		\$2.96		\$1.13

ANNUAL REPORT, 1964

77

TABLE 9
SOCIAL SERVICE RECIPIENTS MEDICAL SERVICES UTILIZATION
April 1st, 1964 - March 31st, 1965—(Continued)

Type of Service	Recipient		Spouse		Child	
	No. of Services	Fee	No. of Services	Fee	No. of Services	Fee
GROUP "C"						
Office:						
First	934	\$ 5,567.00	6	\$ 42.00	739	\$ 4,667.00
Minor I	6,075	25,246.00	124	480.00	8,474	34,842.50
Repeat	6,575	17,777.50	180	486.00	5,651	15,544.00
Referred	56	237.00			4	20.00
House	633	2,940.00	20	100.00	1,832	7,921.00
N.H.E.	380	2,546.00	12	94.00	669	4,981.00
Detention Fee	9	42.00			14	55.00
Hospital—Active	5,420	13,314.50	614	975.50	6,745	18,631.00
Referred	378	1,168.00	32	126.00	147	614.50
Chronic	216	438.00	58	116.00	6	12.00
Mileage	3	20.00			19	11.00
Certificate	15	87.00			28	52.00
Consultation	550	6,938.00	16	270.00	511	6,304.00
Laboratory	3,661	8,702.00	37	135.00	2,790	5,898.25
Minor Procedures	458	445.00	12	15.00	448	414.00
Obstetrics and Gynaecology	479	29,560.00	8	595.00	21	1,035.00
General Surgery	719	24,271.67	9	47.00	914	15,038.00
Ortho. Surgery	103	4,931.50	2	85.00	175	6,527.33
Neuro. Surgery	19	887.00	4	55.00	31	440.00
Urolo. Surgery	45	809.00	2	20.00	37	719.00
Otolaryngology	57	2,403.00			489	15,183.00
Eye	337	3,273.00	4	34.00	729	10,452.00
Plastic Surgery	15	591.00			25	1,456.50
Internal Medicine	217	2,109.50	6	45.00	97	870.00
Psychiatry	501	4,315.75	1	7.50	155	1,201.00
Paediatrics	4	30.00			217	1,744.00
Dermatology	455	1,646.00	1	2.00	753	3,080.50
Physiatry	3	55.00			9	65.00
X-Ray	1,571	18,721.50	34	351.00	1,385	12,912.50
Anaesthesia	764	12,862.00	11	200.00	689	12,105.00
Surgical Assistant	142	2,365.50	2	45.00	51	960.00
Totals	30,794	\$ 194,299.42	1,195	\$ 4,326.00	33,854	\$ 183,756.08
Average cost per service		\$6.31		\$3.62		\$5.43
Average cost per individual covered		\$3.61		\$6.80		\$1.21
GROUP "D"						
Office:						
First	538	\$ 3,276.00				
Minor I	3,117	12,674.00				
Repeat	1,869	5,155.00				
Referred	15	75.00				
House	1,052	5,338.00				
N.H.E.	241	1,752.00				
Detention Fee	44	267.00				
Hospital—Active	3,081	7,080.00				
Referred	68	319.00				
Chronic	24	56.00				
Mileage	6	48.00				
Certificate	65	475.00				
Consultation	254	3,347.00				
Laboratory	910	1,846.50				
Minor Procedures	110	132.00				
Obstetrics and Gynaecology	28	2,195.00				
General Surgery	285	6,591.00				
Ortho. Surgery	105	6,146.00				
Neuro. Surgery	36	488.00				
Urolo. Surgery	46	717.00				
Otolaryngology	125	4,376.50				
Eye	343	4,732.00				
Plastic Surgery	14	1,455.00				
Internal Medicine	54	477.00				
Psychiatry	1,283	10,889.50				
Paediatrics	375	3,264.00				
Dermatology	367	1,474.50				
Physiatry	17	139.50				
X-Ray	515	4,908.50				
Anaesthesia	271	5,303.00				
Surgical Assistant	19	423.00				
Totals	15,277	\$ 95,420.00				
Average cost per service		\$6.25				
Average cost per individual covered		\$2.28				

TABLE 9
SOCIAL SERVICE RECIPIENTS MEDICAL SERVICES UTILIZATION
April 1st, 1964 - March 31st, 1965—(Continued)

Type of Service	Recipient		Spouse		Child	
	No. of Services	Fee	No. of Services	Fee	No. of Services	Fee
GROUP "E"						
Office:						
First	5	\$ 35.00				
Minor I	59	199.00				
Repeat	32	84.00				
House	6	32.00				
N.H.E.	5	40.00				
Detention Fee	1	60.00				
Hospital—Active	11	32.00				
Consultation	5	57.00				
Laboratory	25	63.50				
General Surgery	6	683.00				
Neuro. Surgery	1	5.00				
Otolaryngology	3	350.00				
Eye	3	30.00				
Internal Medicine	2	15.00				
Psychiatry	3	15.00				
Paediatrics	1	10.00				
Dermatology	4	85.00				
Physiatry	1	10.00				
X-Ray	7	90.00				
Anaesthesia	6	220.00				
Surgical Assistant	1	.....			
Totals	187	\$ 2,115.50				
Average cost per service		\$11.31				
Average cost per individual covered		\$ 1.68				
Total Cost and Services						
GROUPS A, B, C, D, E	476,283	\$1,965,450.96	40,421	\$ 194,813.93	51,880	\$ 274,333.91
Average cost per service		\$4.12		\$4.82		\$5.29
Average cost per individual covered		\$3.77		\$2.98		\$1.34
TOTAL SERVICES RENDERED					568,584	
TOTAL ASSESSED COST					\$2,434,598.80	
Average cost per service					\$4.28	
Average cost per individual covered					\$3.08	

2. Dental Services for Social Service Recipients

The per capita payment made to the Alberta Dental Association on behalf of Social Service Recipients in 1964 amounted to 53¢ per month or \$6.36 per year. Routine dental care is provided to all recipients except as follows: new dentures and partial plates are provided at half cost to eligible individuals. Posterior bridge work is not provided. The dentist receives as full payment for services provided to Social Service Recipients, 75% of the approved fee schedule on submission of his accounts to the Alberta Dental Association. In 1964 the Province paid to the Alberta Dental Association for dental services \$416,127.38 as compared to \$376,373.67 in 1963. This was an increase of \$39,753.71 or 10.56%.

Dental services were used by 14,462 recipients and dependents in 1964. The disbursement made by the Alberta Dental Association to the practising dentists during 1964 was \$363,091.30. Administrative costs were \$23,746.03 or 5.71%.

TABLE 10
SOCIAL SERVICE RECIPIENTS UTILIZATION OF DENTAL SERVICES BY GROUPS, 1964

	Average Number Eligible	Number Receiving Treatment	Per Cent of Participation	Disbursements Per Group	Average Cost Per Treated Person
Group "A" and Spouses	32,547	2,908	8.9	\$ 64,315.07	\$22.12
" " dependent children	1,066	266	25.0	6,623.25	24.90
Group "B" and Spouses	8,322	1,832	22.0	49,912.45	27.24
" " dependent children	3,224	1,055	32.7	25,832.25	24.49
Group "C" and Spouses	4,446	1,697	38.2	50,559.00	29.79
" " dependent children	12,257	5,314	43.4	130,818.25	24.62
Group "D"	3,483	1,360	39.0	34,278.03	25.20
Group "E"	110	30	27.3	753.00	25.10
	65,455	14,462	22.1	\$363,091.30	\$25.11

3. Optical Services for Social Service Recipients

The total claim for glasses in 1964 was 9,638 at a cost of \$92,010.61. This represents a decrease of 931 in claims and of \$14,354.28 in payments.

Comparative data for eligible recipients is shown in the following table:

TABLE 11
SOCIAL SERVICE RECIPIENTS UTILIZATION AND COSTS OF OPTICAL SERVICES
1959 - 1964

Year	Average Number of Recipients	Number of Accounts	% of Recipients Obtaining Glasses	Total Cost of Glasses	Cost Per Account
1959	44,051	7,890	17.9	\$ 77,225.30	\$ 9.79
1960	47,618	8,523	17.9	82,680.70	9.70
1961	50,459	8,338	16.5	82,287.13	9.88
1962	57,639	8,617	14.9	82,350.03	9.44
1963	61,450	10,569	17.2	106,364.89	10.06
1964	65,455	9,638	14.7	92,010.61	9.54

The percentage of recipients obtaining glasses was 2.5% lower than in 1963 and the cost per account was 52¢ lower. The total payment to optometrists was \$57,060.00 for 6,584 claims, an increase of \$5,693.50 in payments and a decrease of 602 in claims. The increase in total payments to optometrists, despite the decrease in claims, is brought about by the fact that this was the first full calendar year at the revised examination and fitting fee of \$9.00, first paid to optometrists in April, 1963. Payments to the medical eye specialist is part of the overall agreement for pensioner medical care made with the College of Physicians and Surgeons.

4. Chiropractic Services for Social Service Recipients

Under the agreement concluded between the Alberta Chiropractic Association and the Department of Public Health in June, 1961, a per capita payment of \$1.20 per year is paid by the Department to the Association for the provision of chiropractic care for all Social Service Recipient Groups except Groups D and E. The total payment to the Association in 1964 was \$74,235.40. This represents an increase of \$4,573.50 or 6.56% over the 1963 payment of \$69,661.90.

5. Other Treatment Services

These services include physiotherapy and podiatry, and are only provided upon the recommendation of the patient's physician and the approval of the Director of Medical Services, Department of Public Health. Expenditure in 1964 amounted to \$1,412.00, and was practically all for physiotherapy. This represented a further decrease of \$522.00 or 26.99% in expenditure. Out-patient physiotherapy received at hospitals is part of the Hospitalization Benefits Program and is not included in the above.

SCHOOLS FOR NURSING AIDES

These schools, started under The Nursing Aides Act, 1947, are intended to give an opportunity for a professional career in nursing to women who might not possess the necessary academic qualifications to enroll in a regular School of Nursing.

This program has been an unqualified success from its beginning, the first school having been started in Calgary in 1948. In 1958 a second school was opened in Edmonton. There is an increasing demand for the services of these people occasioned by the increase in size and number of acute and auxiliary hospitals and the decreasing time the professional nurse has to spend with the patient. The field of bedside nursing care is becoming the nursing aide's and she is doing it very well.

TABLE 12
TOTAL NURSING AIDE GRADUATES 1955-1964

1955	270	1960	449
1956	254	1961	463
1957	239	1962	541
1958	281	1963	527
1959	451	1964	450

A total of 5,339 nursing aides have been certified to date, including those persons certified under Sections 18 and 19 of the Nursing Aides Regulations in the Province.

NURSING RECRUITMENT PROGRAM

Nursing Recruitment provides a background of information and material for use in provincial programs, gives assistance to local groups in establishing a program that will encourage higher and better qualified enrolment in all areas of nursing, and provides co-ordination of overall publicity for recruitment in the Province.

Three Provincial School Counsellors' Conferences were held, two in Edmonton and one in Calgary.

Approximately 3,500 career folders of information have been directed to the following groups:

- (a) Secondary Schools in Alberta
- (b) 1,025 School Personnel (including Counsellors, Principals and Superintendents)
- (c) 48 Chapters of the Alberta Association of Registered Nurses
- (d) 24 Health Units
- (e) 17 Municipal Nurses
- (f) 150 Hospitals
- (g) 105 Home and School Associations

An estimated 45,000 pamphlets have been distributed to educational and nursing personnel, school students and key people in health careers.

Displays were set up for 12 schools of nursing and 15 active treatment hospitals.

Recruitment exhibit booths were arranged and staffed at conventions of the Alberta Association of Registered Nurses, the Associated Hospitals of Alberta, and the Alberta Federation of Home and School, the Camrose Agricultural Fair, Open House events at the Royal Alexandra Hospital and the University of Alberta Hospital, and CFRN and CBC TV.

Each month some 40 letters of enquiry are received. Of this number approximately 10 are from outside of the Province. Ninety-two "Career Events" were planned and co-ordinated. An attendance of 3,700 parents and students was recorded.

Publicity for "Open House" for hospitals was developed and provided through TV, radio, newspaper and direct correspondence throughout the Province.

LABORATORY AND X-RAY SCHOOL

This school was started by the Department of Public Health in 1954 to supply technicians trained in Radiology and Diagnostic Laboratory techniques to smaller hospitals that would be economically unable to hire two such individuals and whose work load would not justify it.

In October, 1962, the course was extended by one month to seven months, thus enabling clinical evaluations in Blood Glucose, B.U.N., Bilirubin and Prothrombin Time to be taught.

The demand for graduates of this combined course absorbed all of the trainees of the 1963-64 course. Many rural hospitals are increasingly active with the increased scope of clinical tests taught, to the point of employing more than one graduate.

Recognition of the graduates of this course was signified in 1964 by the British Society of Radiographers in extension of full-time credit towards the M.S.R. qualification. The Canadian Society of Radiological Technicians have seen fit to reaffirm such credits, and the Canadian Society of Laboratory Technologists extend associate memberships to all graduates.

On December 31st, 1964, there were 16 students in training with positions awaiting them. To that date 186 had been trained, of these 123 were active, 77 in rural hospitals, 18 had advanced or were advancing to a higher degree (Registered Technician), and the remainder in clinics, etc.

DIVISION OF CANCER SERVICES

H. B. Mason, B.Sc., Business Manager

The three Cancer Clinics in the Province of Alberta have experienced a very busy year (1964) as the tables below will reveal:

1. Number of examinations made (Malignant and Benign) January 1-December 31, 1964, is 30,944.

	New		Review		Total	
	1964	1963	1964	1963	1964	1963
Edmonton	3,192	3,339	11,265	10,750	14,457	14,089
Calgary	1,922	2,049	12,402	11,344	14,324	13,393
Lethbridge	556	451	1,607	1,506	2,163	1,957

It will be noted that the total number of examinations made in the Edmonton, Calgary and Lethbridge Clinics is 30,944 as compared with 29,439 in 1963; 27,170 in 1962; 26,511 in 1961 and 24,718 in 1960.

2. Number of examinations made where malignancy was proven 27,268 as compared with 25,287 in 1963 as shown in the following table:

	Edmonton	Calgary	Lethbridge	Total
1964	12,333	13,111	1,824	27,268
1963	11,682	11,919	1,686	25,287

3. EDMONTON CLINIC

New Malignant cases reporting to Clinic—1964	1,493
Previously benign cases reporting to Clinic—1964	163
Total New Malignant cases reporting to Clinic in 1964	1,656
Non-reporting Malignant cases by—	
Pathological report	262
Autopsy report	48
Reported by Vital Statistics	167
Total	2,133
Prior to 1953 Malignant cases reporting to Clinic for the first time in 1964	3
Cases treated elsewhere reporting to Clinic in 1964	109
Cases who developed a second malignancy in 1964	91

CALGARY CLINIC

New Malignant cases reporting to Clinic—1964	977
Previously benign cases reporting to Clinic—1964	72
Total New Malignant cases reporting to Clinic in 1964	1,049
Non-reporting Malignant cases by—	
Pathological report	190
Autopsy report	22
Reported by Vital Statistics	135
Total	1,396
Prior to 1953 Malignant cases reporting to Clinic for the first time in 1964 ....	...
Cases treated elsewhere reporting to Clinic in 1964	97
Cases who developed a second malignancy in 1964	50

LETHBRIDGE CLINIC

New Malignant cases reporting to Clinic—1964	224
Previously benign cases reporting to Clinic—1964	1
Total New Malignant cases reporting to Clinic in 1964	225
Non-reporting Malignant cases by—	
Pathological report	25
Autopsy report	43
Reported by Vital Statistics	23
Total	316
Prior to 1953 Malignant cases reporting to Clinic for the first time in 1964 ....	...
Cases treated elsewhere reporting to Clinic in 1964	17
Cases who developed a second malignancy in 1964	18

The total number of New Malignant cases discovered in Alberta in 1964 was 3,845.

4. Number of examinations made on patients which proved Benign:

	Edmonton	Calgary	Lethbridge	Total
1964	2,124	1,213	339	3,676
1963	2,407	1,474	271	4,152

5. (a) EDMONTON CLINIC

Diagnostic Radiology

	No. of Films	No. of Pts.	No. of Exams	Average No. of Exams per day
1964	33,456	7,475	11,749	46.8
1963	33,842	8,463	11,825	47.3
1962	34,857	8,017	11,140	44.7

Outside films reviewed:

1964—13,745 films on 1,176 patients
 1963—11,443 films on 1,001 patients
 1962—9,217 films on 763 patients

	G.I. Series	Large Bowel and Air Contrast	Barium Fluoroscopies	Urinary Tract	Tomograms
1964	538	494	1,032	174	341
1963	790	784	1,574	190	297
1962 .....	....	....	1,179	321	345

Therapeutic Radiology

	New	Retreat	Total
Patients treated by X-ray, Cobalt 60 or Cesium 137	626	347	973
Patients treated by Cobalt 60 and radium	40	....	40
Patients treated by radium alone	23	3	26
Total patients treated at Clinic	689	350	1,039

Treatments given by

Cobalt 60	9,831
Deep X-ray	343
Superficial X-ray	1,035
Cesium 137	3,334
Treatments on two machines	110
Total treatments	14,653
Radium insertions, implants	110
Biopsies done at Clinic	5
Laboratory examinations in Clinic Laboratory	46,170
(Units of Laboratory work)	

5. (b) CALGARY CLINIC

Diagnostic Radiology

	No. of Films	No. of Pts.	No. of Exams	Average No. of Exams per day
1964	8,732	2,442	3,307	13.2
1963	9,301	2,392	3,522	14
1962	10,427	2,849	3,818	15.3

Outside films reviewed—1,325

Therapeutic Radiology

	New	Retreat	Total
Patients treated by X-ray, Cobalt 60 or Cesium 137	478	294	772
Patients treated by Cobalt 60 or Cesium 137 or radium	45	....	45
Patients treated by radium alone .....	....	....	....
Total patients treated at Clinic	523	294	817

Treatments given by

Cobalt 60	4,391
Cobalt rotation	2,012
Cesium 137	1,435
Superficial X-ray	1,774
Total treatments	9,612
Radium insertions, implants	63
Biopsies done at Clinic	16
Laboratory examinations in Clinic Laboratory	20,499
(Units of Laboratory work)	

6. NUMBER OF CASES SUPPLIED WITH THE FOLLOWING SERVICES

	Out-Patient Hospital Services		Radiation Therapy	
	1964	1963	1964	1963
Edmonton	455	334	1,052	1,088
Calgary	250	179	817	857
Lethbridge	8	4	72	66
	713	517	1,941	2,011

	Diagnostic X-ray		Major Surgery		Exploratory Laparotomy	
	1964	1963	1964	1963	1964	1963
Edmonton	7,626	8,463	922	1,608	155	207
Calgary	2,541	2,499	636	845	74	115
Lethbridge	488	434	128	165	23	21
	10,655	11,396	1,686	2,618	252	343

	Breast Biopsies		Other Biopsies		Diagnostic Curettages	
	1964	1963	1964	1963	1964	1963
Edmonton	429	502	806	834	211	445
Calgary	160	339	465	791	150	186
Lethbridge	101	98	131	159	34	53
	690	939	1,402	1,784	395	684

	Encephalo- grams, etc.		Bronchoscopy and Esophagoscopy		Sigmoidoscopy	
	1964	1963	1964	1963	1964	1963
Edmonton	15	19	188	212	215	255
Calgary	4	...	60	81	18	19
Lethbridge .....	...	...	3	8	7	10
	19	19	251	301	240	284

	Cystoscopy		Investigations and Consultations		Laboratory Tests*	
	1964	1963	1964	1963	1964	1963
Edmonton	400	406	708	176	51,104	48,775
Calgary	118	185	176	69	22,832	19,488
Lethbridge	41	46	8	5	1,159	717
	559	637	892	250	75,095	68,980

*Units of Laboratory work (Dominion Bureau of Statistics)

7. Since the opening of the Clinics in 1941 the total number of examinations made is 314,874.

DIVISION OF SOCIAL HYGIENE

P. L. Rentiers, M.D., Director

There have been no organizational changes in the Division of Social Hygiene during 1964. Appended are the statistical tables for the year. These, in brief, show a heartening downward trend in reported cases of both syphilis and gonorrhoea. There were 110 new cases of syphilis, of which 83 were of the early infectious type. This represents an over-all decrease from 1963 of 46 cases and a decrease in early infectious cases of ten. There were two congenital cases reported, both in males, 21 and 23 years of age respectively. Once again the value of routine blood testing in the control of syphilis becomes apparent. Of the 110 cases found 37 were discovered because of such testing. Three further cases came to light because of premarital blood tests.

In regard to gonorrhoea there has been a slight improvement in that 3,953 cases were reported in 1964 as compared to 4,096 in 1963. However, as mentioned in two previous annual reports, the reliability of quoted figures on gonorrhoea remains extremely poor. It is expected that contemplated changes in the Venereal Diseases Act will greatly improve the accuracy of statistical information with regard to this disease and it is anticipated that there will be a considerable upward rise in the ensuing years.

Grateful acknowledgement is made to the private physicians, the Health and Welfare agencies, and to all others whose interest and co-operation further the work of the Division.

DIVISION OF SOCIAL HYGIENE ALLEGED SOURCES OF OR CONTACTS TO VENEREAL INFECTION JANUARY 1 TO DECEMBER 31, 1964

	Reported Contacts with Sufficient Information for Investigation			Reported Cases of Venereal Infection with Insufficient or No Information Concerning Contacts
	Number Reported	Number Located	Number No Action Taken	
Totals	4,529	4,134	105	1,534
Residential Status:				
Alberta	3,853	3,579	83	....
Non-Alberta	239	145	6	....
Northwest Territories	437	410	16	....
Agents Forwarding Information:				
Private Physicians	1,644	1,483	73	870
Armed Forces	58	53	....	17
Provincial Clinics	2,575	2,414	32	647
Other Provinces	252	184	....	....

EPIDEMIOLOGICAL INVESTIGATIONS CARRIED OUT BY DIVISION OF SOCIAL HYGIENE

Unit	I. Reported Contacts to Venereal Disease					III. Miscellaneous
	Processed	Investigated	No Action Taken	Not Investigated Insufficient Information	II. Delinquents	
Edmonton Clinic	2,484	1,923	....	561	500	305
Calgary Clinic	1,819	1,750	....	69	41	139
Lethbridge Clinic	152	138	....	14	4	132
Mobile Clinic	314	311	....	3	....	86
Head Office	6,168	4,529	105	1,534	....	....

PROVINCIAL CLINIC, Alberta Jasper Building, 9815 Jasper Avenue, Edmonton, Alberta
Total Number of New Cases of Venereal Disease Classified as to Sex and Age of Patient:

	Under 1 Yr.		1-4 Yrs.		5-14 Yrs.		15-19 Yrs.		20 Yrs. & Over		Age Not Stated		Totals
	M	F	M	F	M	F	M	F	M	F	M	F	
Gonorrhoea (All Forms).....							94	153	1219	391			1857
Syphilis (Acquired—Primary)							2		21	2			25
Syphilis (Acquired—Secondary)								4	6	7			17
Syphilis (Acquired—Latent)									3	1			4
TOTALS							96	157	1249	401			1903

Number of Cases of Syphilis—Male 32; Female 14	46
Number of Cases of Gonorrhoea—Male 1,313; Female 544	1,857
Number and Results of Serological Tests for Syphilis	5,826 of which 497 were Reactive
Number and Results of Darkfield Examinations	133 of which 22 were Positive
Number and Results of Cerebrospinal Fluid Tests	1 of which 0 were Positive
Number and Results of Bacteriological Tests for Gonococci	2,078 of which 1,419 were Positive
Number and Results of Cultures taken for Gonococci	3,490 of which 661 were Positive
Total Number of Patient Visits	14,359
Total Number of New Admissions	1,609
Total Number of Old Infections for Follow-up First Time in Current Year—	
Syphilis	229
Gonorrhoea	1,074

PROVINCIAL CLINIC—118 - 11th Avenue S.E., Calgary, Alberta

Total Number of New Cases of Venereal Disease Classified as to Sex and Age of Patient:

	Under 1 Yr.		1-4 Yrs.		5-14 Yrs.		15-19 Yrs.		20 Yrs. & Over		Age Not Stated		Totals
	M	F	M	F	M	F	M	F	M	F	M	F	
Gonorrhoea (All Forms).....						3	39	27	532	45			646
Syphilis (Acquired—Primary)								1	5	1			7
Syphilis (Acquired—Secondary)									1	2			3
TOTALS						3	39	28	538	48			656

Number of Cases of Syphilis—Male 6; Female 4	10
Number of Cases of Gonorrhoea—Male 571; Female 75	646
Number and Results of Serological Tests for Syphilis	7,977 of which 113 were Reactive
Number and Results of Darkfield Examinations	14 of which 4 were Positive
Number and Results of Cerebrospinal Fluid Tests	2 of which 0 were Positive
Number and Results of Bacteriological Tests for Gonococci	2,983 of which 657 were Positive
Number and Results of Cultures taken for Gonococci	744 of which 6 were Positive
Total Number of Patient Visits	12,704
Total Number of New Admissions	1,742
Total Number of Old Infections for Follow-up First Time in Current Year—	
Syphilis	49
Gonorrhoea	90

PROVINCIAL CLINIC, c/o Lethbridge Municipal Hospital, Lethbridge, Alberta

Total Number of New Cases of Venereal Disease Classified as to Sex and Age of Patient:

	Under 1 Yr.		1-4 Yrs.		5-14 Yrs.		15-19 Yrs.		20 Yrs. & Over		Age Not Stated		Totals
	M	F	M	F	M	F	M	F	M	F	M	F	
Gonorrhoea (All Forms).....							3	2	55	15			75
TOTALS							3	2	55	15			75

Number of Cases of Gonorrhoea—Male 58; Female 17	75
Number and Results of Serological Tests for Syphilis	492 of which 6 were Reactive
Number and Results of Darkfield Examinations	6 of which 0 were Positive
Number and Results of Cerebrospinal Fluid Tests	0 of which 0 were Positive
Number and Results of Bacteriological Tests for Gonococci	178 of which 69 were Positive
Number and Results of Cultures taken for Gonococci	43 of which 1 were Positive
Total Number of Patient Visits	632
Total Number of New Admissions	100
Total Number of Old Infections for Follow-up First Time in Current Year—	
Syphilis	5
Gonorrhoea	8

MOBILE CLINIC—Lac La Biche, McMurray, Fort McKay, Athabasca, Slave Lake Area, Whitecourt, Valleyview, Peace River and Grande Prairie Areas, Red Deer, Drayton Valley and Edson Areas.

Total Number of New Cases of Venereal Disease Classified as to Sex and Age of Patient:

	Under 1 Yr.		1-4 Yrs.		5-14 Yrs.		15-19 Yrs.		20 Yrs. & Over		Age Not Stated		Totals
	M	F	M	F	M	F	M	F	M	F	M	F	
Gonorrhoea (All Forms).....	1	.....	4	2	2	.....	.....	9
Syphilis (Acquired—Primary)	1	.....	.....	.....	1
Syphilis (Acquired—Secondary)	1	.....	.....	.....	1
Syphilis (Acquired—Latent)	3	3	.....	.....	6
TOTALS	1	.....	4	7	5	.....	.....	17

Number of Cases of Syphilis—Male 5; Female 3 8
 Number of Cases of Gonorrhoea—Male 2; Female 7 9
 Number and Results of Serological Tests for Syphilis 1,668 of which 101 were Reactive
 Total Number of Treatments Given 14

PROVINCIAL GAOL—Fort Saskatchewan, Alberta

Total Number of New Cases of Venereal Disease Classified as to Sex and Age of Patient:

	Under 1 Yr.		1-4 Yrs.		5-14 Yrs.		15-19 Yrs.		20 Yrs. & Over		Age Not Stated		Totals
	M	F	M	F	M	F	M	F	M	F	M	F	
Gonorrhoea (All Forms).....	11	40	57	107	.....	.....	215
Syphilis (Acquired—Primary)	1	.....	.....	1
Acquired—Secondary	2	1	.....	.....	3
Acquired—Latent	3	.....	.....	.....	3
TOTALS	11	40	62	109	.....	.....	222

Number of Cases of Syphilis—Male 5; Female 2 7
 Number of Cases of Gonorrhoea—Male 68; Female 147 215
 Number and Results of Serological Tests for Syphilis 5,112 of which 245 were Reactive
 Number and Results of Bacteriological Tests for Gonococci 154 of which 97 were Positive
 Number and Results of Cultures taken for Gonococci 2,421 of which 431 were Positive

PROVINCIAL GAOL, Lethbridge, Alberta.

Total Number of New Cases of Venereal Disease Classified as to Sex and Age of Patient:

	Under 1 Yr.		1-4 Yrs.		5-14 Yrs.		15-19 Yrs.		20 Yrs. & Over		Age Not Stated		Totals
	M	F	M	F	M	F	M	F	M	F	M	F	
Gonorrhoea (All Forms).....	1	.....	14	.....	1	.....	16
Syphilis (Acquired—Secondary)	1	.....	.....	.....	1
TOTALS	1	.....	15	.....	1	.....	17

Number of Cases of Syphilis—Male 1 1
 Number of Cases of Gonorrhoea—Male 16 16
 Number of Prisoners Admitted 2,647
 Number and Results of Serological Tests for Syphilis 792 of which 12 were Reactive

SPY HILL GAOL, Calgary, Alberta

Total Number of New Cases of Venereal Disease Classified as to Sex and Age of Patient:

	Under 1 Yr.		1-4 Yrs.		5-14 Yrs.		15-19 Yrs.		20 Yrs. & Over		Age Not Stated		Totals
	M	F	M	F	M	F	M	F	M	F	M	F	
Gonorrhoea (All Forms).....	1	.....	1	.....	1	.....	3
TOTALS	1	.....	1	.....	1	.....	3

Number of Cases of Gonorrhoea—Male 3 3
 Number of Prisoners Admitted 3,759
 Number and Results of Serological Tests for Syphilis — 2,000 of which 12 were Reactive

PRIVATE PHYSICIANS REPORTING CASES

Total Number of New Cases of Venereal Disease Classified as to Sex and Age of Patient:

	Under 1 Yr.		1-4 Yrs.		5-14 Yrs.		15-19 Yrs.		20 Yrs. & Over		Age Not Stated		Totals
	M	F	M	F	M	F	M	F	M	F	M	F	
Gonorrhoea (All Forms).....			1	3	3	12	82	88	628	198	42	28	1085
Syphilis—Congenital									2				2
Syphilis (Acquired—Primary)							1		8	1	1		11
Syphilis (Acquired—Secondary)						1		1	5	4			11
Syphilis (Acquired—Latent)									1	7			8
Acquired—Tertiary (Cardiovascular)									1				1
Acquired—Tertiary (Neurosyphilis)										1			1
Acquired—Tertiary (Other)									2				2
TOTALS			1	3	3	13	83	89	647	211	43	28	1121

Number of Cases of Syphilis—Male 21; Female 15

36

Number of Cases of Gonorrhoea—Male 756; Female 329

1,085

Number of Doctors in the Province receiving Consultative Service—87

NEW CASES OF SYPHILIS AND GONORRHOEA REPORTED IN ALBERTA—1964

Total Number of New Cases of Venereal Disease Classified as to Sex and Age of Patient:

	Under 1 Yr.		1-4 Yrs.		5-14 Yrs.		15-19 Yrs.		20 Yrs. & Over		Age Not Stated		Totals
	M	F	M	F	M	F	M	F	M	F	M	F	
Gonorrhoea (All Forms).....			1	3	3	16	241	314	2540	759	48	28	3953
Syphilis—Congenital									2				2
Syphilis (Acquired—Primary)							3	1	36	5	1		46
Syphilis (Acquired—Secondary)						1		5	17	14			37
Syphilis (Acquired—Latent)									10	11			21
Acquired—Tertiary (Cardiovascular)									1				1
Acquired—Tertiary (Neurosyphilis)										1			1
Acquired—Tertiary (Other)									2				2
TOTALS			1	3	3	17	244	320	2608	790	49	28	4063

Total Cases Syphilis—Male 72; Female 38

110

Total Cases Gonorrhoea (All Forms)—Male 2,833; Female 1,120

3,953

TOTAL NUMBER OF CASES REPORTED BY VARIOUS CLINICS OF THE DIVISION
OF SOCIAL HYGIENE

Sex	Syphilis	Gonorrhoea	Totals
Male	49	2,031	2,080
Female	23	790	813
TOTALS	72	2,821	2,893

CASES REPORTED BY DOCTORS AND MILITARY AUTHORITIES

	Private Physicians	Armed Forces	Totals
Syphilis	36	2	38
Gonorrhoea	1,085	47	1,132
TOTALS	1,121	49	1,170

NEW CASES OF SYPHILIS AND GONORRHOEA REPORTED IN NORTHWEST
TERRITORIES—1964

Total Number of New Cases of Venereal Disease Classified as to Sex and Age of Patient:

	Under 1 Yr.		1-4 Yrs.		5-14 Yrs.		15-19 Yrs.		20 Yrs. & Over		Age Not Stated		Totals
	M	F	M	F	M	F	M	F	M	F	M	F	
Gonorrhoea (All Forms).....						2	27	26	227	64	22	5	373
TOTALS						2	27	26	227	64	22	5	373

Number of Cases of Gonorrhoea—Male 276; Female 97

373

REPORT OF THE PROVINCIAL LABORATORIES

R. D. Stuart, M.D., Director

During 1964 the Provincial Laboratories carried out 1,049,004 examinations, 99,340 more than in 1963. This is the first time this figure has passed the million mark. The increase of approximately 10% in total examinations again correlates reasonably closely with the 12% increase in total units of work calculated on the Dominion Bureau of Statistics system. This is particularly significant in relation to the Calgary laboratory which reached its theoretical limit of capacity in its present location some years ago. The Edmonton laboratory has been more fortunate in space and location, and rapid progress is being made in the construction of a new wing to the present building. This addition will allow re-location of departments and re-arrangement of the total service area which should lead to greater convenience and economy in laboratory operation.

SPECIAL TRENDS

Of particular moment has been the increasing demand by various Health Authorities for investigation of suspected bacterial food poisoning episodes. The Edmonton laboratory examined 221 specimens of food from 46 related incidents. Staphylococcal food poisoning appeared to be most common, but a number of instances of Salmonella infection were encountered, one at least being responsible for more than 100 cases, and botulism was found to be the cause of death of three people in an Eskimo family. In many instances, however, the etiology of the apparent food poisoning episode remained unproved, indicating the difficulty in such examinations. A special laboratory section will be set up in the near future to deal with this matter and with the more important background problems of food hygiene in general.

The trend towards increasing involvement in formalized technical training is becoming apparent. In Edmonton, special advanced courses for A.R.T. certification have been given in association with the Clinical Laboratory Division of the University Hospital and the University Departments of Pathology and Bacteriology. These courses have been welcomed by senior registered technologists in the Edmonton area and have contributed significantly to their understanding of the newer developments in many technical fields. The increasing demand for cytological services, especially for smear diagnosis of cancer, could not have been met without the establishment of special training facilities for technical workers in this field. Such a school has been set up by Dr. Kasper in the Edmonton laboratory, and has now been approved by the Canadian Society of Laboratory Technologists for training towards specialty certification.

Trends do not always show evolution and growth, sometimes devolution and disappearance may be just as significant. This is so in relation to pregnancy diagnosis, which has been carried out in the Edmonton laboratory from the time the first Zondek-Ascheim rabbit test was described more than thirty years ago. So long as animal facilities were required for such tests the Provincial Laboratory considered that

it had to carry them out as a necessary service not otherwise obtainable. In recent years, however, adequate and efficient tests have been elaborated which do not need animal facilities. Such tests can be carried out readily in hospitals, private laboratories and even in doctors' offices. Consequently, the Provincial Laboratory has now terminated its contribution in this field.

NEW OR SUPPLEMENTARY SERVICES

Although the cytology smear service offered by both Calgary and Edmonton laboratories is not a new service, its extremely rapid development indicates an awareness by practitioners of its potentiality. In relation to cervical smears this is evident in the figures provided, 6,572 examinations in Calgary, a 43% increase over 1963, and 32,795 in Edmonton, a 64% increase. In from 1% to 1.5% of these smears abnormal cells were found suggestive of neoplasm or indicating the desirability of further investigation. Dr. Shute believes that probably 5 patients out of every 1,000 examined will be found on further examination to be suffering from malignant disease. This may not sound a very impressive total but Dr. Macgregor emphasises that in many of these cases of cervical cancer smear examination has led to the detection of the disease in its pre-invasive stage and that in such cases cure can confidently be expected. This contention is supported by the Calgary findings which show that 16 of their 25 proved cases of cervical cancer were detected in this early stage. In consequence of these technical developments the picture in this common form of cancer in women is rapidly changing and the invasive, fatal form of the disease may eventually become a rarity.

The application and development of the new technique of fluorescent antibody (F.A.) investigation is rapidly attaining the status of a supplementary service. This technique depends on the identification of bacteria and viruses by the application of specific serum antibodies tagged with fluorescent dyes which become visible microscopically under ultraviolet illumination. The technique holds great promise for speeding up many types of investigation but is not yet entirely reliable in all fields. The Edmonton laboratory applied the technique particularly to the diagnosis of gonococcal infection and found almost complete correlation between cultures identified by F.A. methods and by the older standard tests. The time saved, however, varied from one to five days, and this could be very important both in primary diagnosis and in the application of tests for cure. Similar techniques were tested in many other lines of investigation; some will be used under special circumstances, others may eventually be adapted to routine. In every instance, prolonged checking is necessary to ensure that reliability is never sacrificed to speed or convenience.

Another technical development which holds promise for the future is the application of the electron microscope to disease investigation. Space has been provided in the Provincial Laboratory, Edmonton, for the apparatus belonging to the Department of Pathology, and already a few instances of its value in certain unusual diagnostic difficulties have become apparent.

Of more general moment is the introduction of PAS (Professional Activity Study) coding. This system of identifying histological diagnoses was introduced in the fall of 1964 in order to produce a uniform recording system for such results throughout the Province. It is hoped

that this system will be of value in the selection of cases which require further study by tissue committees. Both Edmonton and Calgary laboratories have been pleased to participate in this program.

REGULAR SERVICES

Pathology

Dr. Macgregor reports that biopsy material from 21,327 surgical cases was examined in the Edmonton laboratory during the year. Of the patients concerned, 1,422 (6.6%) were proved to be suffering from cancer. Biopsies from patients in smaller hospitals and doctors' offices numbered 13,613 and the most prevalent sites of cancer in this group were skin, female breast, uterus and large intestine. Bronchogenic carcinoma—one of the most common forms of cancer—was found chiefly in material from large hospitals where specialists in thoracic surgery carry on their practices.

Dr. Shute reports 481 malignancies out of 7,268 surgical biopsies examined in Calgary. This gives a cancer rate of 6.6%—precisely the same as in Edmonton. With figures of this magnitude the correlation may have more than coincidental significance.

Bacteriology

An interesting change has appeared in the incidence of diphtheria which was recognized as a new but very significant problem in both laboratories last year. During 1964 only four virulent strains of *C. diphtheriae* were isolated in the Calgary laboratory compared with over 70 in 1963, whereas Edmonton recorded 80 isolations, a decrease of only five from the preceding year. Almost all of these were derived from children in the Indian reservations, but an occasional positive was encountered in adjacent population groups. The problem is now mainly one of a high carrier rate without much serious clinical disorder and the intensification of immunization procedures over the past few years may soon produce a welcome reduction in the occurrence of these organisms.

The incidence of Salmonellosis has remained high but at least has not increased. Species which were prominent in previous years have remained prominent, but a considerable increase in *S. infantis* isolations from sporadic cases of gastro-enteritis arouses mild concern as perhaps suggesting the implication of a new food vehicle. The reappearance of *S. canada* is also worthy of comment. After virtual disappearance from the Dominion over the past two years, it has reappeared in Alberta and British Columbia. In Alberta it has been isolated from the bloodstream of a patient, suggesting a new invasive capacity which, in view of its antigenic relationship to one of the paratyphoid bacilli, may have more than immediate significance.

The phage-typing of Staphylococci has remained as a continuing heavy service demand, no fewer than 11,501 examinations being carried out. Although much of the work is concerned with general epidemiological surveillance of this ubiquitous organism, it has had immediate application to individual problems of hospital cross-infection and staphylococcal food poisoning.

Virology

No particular epidemic circumstance was encountered during the year but many specimens were received from small outbreaks of apparently related infections or from individual cases of special clinical interest. Serological tests were carried out on paired blood specimens from 1,994 patients and virus isolation was attempted on a variety of specimens from 634. Positive serological results, determined by a more than four-fold rise in titre in successive blood specimens, were obtained in 65 cases and 75 virus strains were isolated. In the absence of important epidemics, the most evident feature about these results was the variety of viruses implicated in undifferentiated upper respiratory disorders. Most prominent were strains of adenoviruses, at least 6 different types being isolated, and an interesting circumstance was the sudden appearance in March of RS virus—often associated with severe infantile pneumonia—and its as sudden disappearance after 9 cases had been identified. Only 2 strains of Polio 3 virus were isolated during the year but no clinical cases were involved. Influenza was not prevalent, only 11 cases of Influenza A being identified serologically.

STAFF

Dr. N. J. Ball relinquished his temporary staff appointment to the Calgary laboratory in September, 1964. Dr. E. P. Crichton returned from the United Kingdom where she had acquired additional experience by working in several laboratories and visiting various public health institutions.

In Edmonton, Dr. Bruce Mielke, who was trained in the University Department of Pathology and had obtained certification in that specialty, joined the staff as Assistant Pathologist in July, 1964. Dr. Cherer G. Penny, a South African graduate with special training in parasitology and clinical pathology and with some experience in clinical practice in Canada, was appointed as Assistant Bacteriologist to the Edmonton laboratory in October, 1964.

TABLE 1
EXAMINATIONS PERFORMED IN THE PROVINCIAL LABORATORIES
YEAR 1964

CONTROL OF COMMON INFECTIONS	Edmonton	Calgary
Diphtheria	18,532	7,421
Enteric—dysentery	16,952	2,862
Fungus infections	3,342	1,474
Intestinal parasites	1,515	137
Naso-pharyngitis	23,239	7,228
Tularaemia serology	1,073	617
Tuberculosis	18,855	3,396
Undulant Fever serology	1,073	617
Whooping cough	27	13
OTHER DIAGNOSTIC AND MISCELLANEOUS		
Animal inoculations (other than T.B.)	523	68
Antibiotic etc. sensitivities—disc	350,044	125,001
quantitative	7	....
Blood cultures	1,726	230
Leptospirosis	331	....
Miscellaneous	35,457	13,042
Paul Bunnell test	1,493	1,188
P.M. Bacteriology	440	....
Referred cultures	3,330	15
Special investigations	15,217	4
Trichomonas	18,089	2,205
Virus infections	35,466	....
VENEREAL DISEASE CONTROL		
Chancroid etc.	2	....
Gonorrhoea—Smears	3,245	6,526
Cultures	17,453	1,839
Syphilis	129,169	45,324
SANITARY BACTERIOLOGY		
Food Products	221	....
Water	23,061	12,510
Restaurant Hygiene	240	....
Milk and Cream .....	....	61
PATHOLOGY		
Diagnostic cytology—blood smears	183	164
cervical smears	32,795	6,572
bone marrows	71	11
fluids	1,372	301
Routine diagnostic histology	34,651	7,819
Routine autopsy histology	12,451	443
Pregnancy diagnosis	271	....
	<u>801,916</u>	<u>247,088</u>

TABLE 2
CONTROL OF ENTERIC-DYSENTERY INFECTIONS

EXAMINATIONS	Edmonton	Calgary
Blood and Clot cultures	838	512
Faecal cultures	14,167	1,664
Urine cultures	29	15
Other examinations	845	54
Serological tests	1,073	617
DETAILS OF ISOLATIONS		
SALMONELLA		
S. typhi	11	4
S. paratyphi B	15	7
S. paratyphi C .....	....	4
S. typhi murium	147	18
S. heidelberg	69	5
S. infantis	25	5
S. newport	19	....
S. thompson	10	4
Other	21	5
SHIGELLA		
Sh. flexneri	284	30
Sh. sonnei	3	4
ENTEROPATHOGENIC E. COLI		
O111:B4	48	....
O26:B6	83	....
O127:B8	46	....
O119:B14	43	....
O125:B15	24	....
Other	53	....

DEPARTMENT OF PUBLIC HEALTH

TABLE 3
CONTROL OF TUBERCULOSIS

EXAMINATIONS		Edmonton	Calgary		
Microscopic		9,004		1,624	
(Positives)		323		57	
Cultures		8,403		951	
Animal Inoculations		1,448		821	
SPECIMENS		No.	Positive	No.	Positive
Pulmonary		6,716	512	1,472	36
Meningeal		90	3	13	1
Renal		1,380	45	364	18
Other		847	42	262	2

TABLE 4
CONTROL OF SYPHILIS

	Edmonton	Calgary
CEREBRO-SPINAL FLUIDS—Wasserman (Kolmer)	1,339	942
BLOODS—Presumptive Kahn or VDRL	111,096	34,783
Standard Kahn .....	...	4,722
Quantitative Kahn or VDRL	2,618	155
Wasserman (Kolmer)	14,116	4,722
Blood and cerebro-spinal fluid "positive" to reaction	531	147
Blood and cerebro-spinal fluid giving reaction below laboratory diagnostic level	2,337	307
PRE-MARITAL BLOODS submitted according to Provincial Regulations	12,341	8,861
Positive to reaction	7	6

TABLE 5
SANITARY CONTROL OF WATER

	Edmonton	Calgary
Water (No. of specimens)	10,848	5,630
Coliform Test—Presumptive	10,848	3,432
Confirmed	3,020	1,078
Special	355	2,288
Plate Count	8,838	5,712
Waters considered bacteriologically unsuitable	282	1,068

TABLE 6
SERA AND VACCINES DISTRIBUTED

	Edmonton	
BIAD (Tetanus-Polio Vaccine)	10 cc.	3,162
Diphtheria Antitoxin	1,000 units	298
Diphtheria Antitoxin	40,000 units	112
Diphtheria Toxin for Schick Test	25 persons	752
Diphtheria Toxoid	3 x 1 cc.	824
Diphtheria Toxoid	6 x 6 cc.	30
Diphtheria Toxoid dilute, for reactors	4 x 1 cc.	338
Diphtheria Toxoid for sensitivity test	2½ cc.	22
D.P.T.	3 x 1 cc.	1,193
D.P.T.	6 x 6 cc.	158
D.T.	3 x 1 cc.	3,685
D.T.	6 x 6 cc.	453
Gas Gangrene Antitoxin	10,000 units	719
Immune Serum Globulin	2 cc.	5,122
Immune Serum Globulin	5 cc.	7,913
Poliomyelitis Vaccine	10 cc.	5,485
QUAD	10 cc.	16,972
Rabies Antiserum	1,000 units	4
Rabies Vaccine	14 x 2 cc.	7
Rocky Mountain Spotted Fever Vaccine	3 cc.	30
Rocky Mountain Spotted Fever Vaccine	20 cc.	76
Sabin Polio Vaccine	20 dose	4,574
Sabin Polio Vaccine	100 dose	1,120
Scarlet Fever Antitoxin	9,000 units	7
Smallpox Vaccine	1 point	2,813
Smallpox Vaccine	10 points	12,157
Snakebite Antivenin	10 cc.	1
Staphylococcus Antitoxin	20,000 units	73
Staphylococcus Toxoid	2 x 2 cc.	1,176
Tetanus Antitoxin	1,500 units	1,967
Tetanus Antitoxin	20,000 units	99
Tetanus Toxoid	3 x 1 cc.	2,460
Tetanus Toxoid	30 cc.	472
TRIAD	10 cc.	6,068
TAB	1 person	1,151
TAB	10 cc.	656
TABT	3 cc.	2,694
TABT	25 cc.	387
Autogenous Vaccine (Provincial Laboratory)	20 cc.	26

TABLE 7
MINIMUM COMMERCIAL VALUE ASSESSED FROM RECOMMENDED
PROVINCIAL SCALES

EXAMINATIONS	Edmonton	Value	Calgary	Value	Total
Diphtheria	18,532	\$ 18,532	7,421	\$ 7,421	\$ 25,953
Enteric-dysentery	16,952	33,904	2,862	5,724	39,628
Fungus Infections	3,342	10,026	1,474	4,422	14,448
Intestinal Parasites	1,515	1,515	137	137	1,652
Naso-pharyngitis	23,239	23,239	7,228	7,228	30,467
Tularaemia serology	1,073	536	617	308	844
Tuberculosis	18,855	37,710	3,396	6,792	44,502
Undulant Fever serology	1,073	536	617	308	844
Whooping Cough	27	54	13	26	80
Animal Inoculations (other than T.B.)	523	1,046	68	136	1,182
Antibiotic etc. sensitivities—disc	350,044	87,501	125,001	31,250	118,751
quantitative	7	21	....	....	21
Blood cultures	1,726	3,452	230	460	3,912
Leptospirosis	331	662	....	....	662
Miscellaneous	35,457	35,457	13,042	13,042	48,499
Paul Bunnell test	1,493	2,986	1,188	2,376	5,362
P.M. Bacteriology	440	880	....	....	880
Referred cultures	3,330	6,660	15	30	6,690
Special investigations	15,217	45,651	4	12	45,663
Trichomonas	18,089	18,089	2,205	2,205	20,294
Virus infections	35,466	141,864	....	....	141,864
Chancroid etc.	2	4	....	....	4
Gonorrhoea—Smears	3,245	3,245	6,526	6,526	9,771
Cultures	17,453	17,453	1,839	1,839	19,292
Syphilis	129,169	258,338	45,324	90,648	348,986
Food Products	221	442	....	....	442
Water	23,061	46,122	12,510	25,020	71,142
Restaurant Hygiene	240	240	....	....	240
Milk and Cream .....	....	....	61	122	122
Diagnostic cytology—blood smears	183	366	164	328	694
cervical smears..	32,795	65,390	6,572	13,144	78,534
bone marrows ..	71	142	11	22	164
fluids	1,372	2,744	301	602	3,346
Routine diagnostic histology	34,651	138,604	7,819	31,276	169,880
Routine autopsy histology	12,451	49,804	443	1,772	51,576
Pregnancy diagnosis	271	1,355	....	....	1,355
TOTALS	801,916	\$1,054,570	247,088	\$ 253,176	\$1,307,746

DIVISION OF SANITARY ENGINEERING

H. L. Hogge, B.Sc., P.Eng., M.E.I.C., Director

This Division administers the Department's public environmental health program in the areas of air and water pollution control, public waterworks and sewerage systems, public and semi-public swimming pools, public health inspection, radiation hazards control, plumbing inspection, and associated research and development programs.

The work program for the year continued to emphasize the quality of new installations through approvals prior to construction and follow-up inspection of actual installations, followed by periodic inspection of existing installations and programs of operator training, together with investigation of complaints.

Plumbing inspection service is being extended to additional small towns and villages who have had difficulty in obtaining the services locally because of lack of suitable persons for the work.

Public Health inspection has continued a general service to areas not served by local Health Units and has provided specialized inspection service in the fields of radiation hazard and swimming pools throughout the Province. Considerable time is being devoted to the North Peace River and the McMurray areas where development is increasing. An 'In-Service' training course for public health inspectors and field men of the Department of Agriculture was presented in co-operation with the Industrial Health Services Division. This course featured the control and precautions required in the use of pesticide chemicals.

Municipal Engineering processed 236 applications for approval of waterworks and sewerage system projects. The estimated cost of the projects receiving final approval is appreciably greater than in previous years, largely due to a change in policy in the City of Edmonton. Operators' schools held this year were attended by 79 operators and are continuing to be very well received by the operators and to provide valuable training in the operation of systems. This section is also supervising a special study of the use of bromine in swimming pool waters.

Air and water pollution control work has included the review of 22 applications for approval of the facilities at new or extending plants and 28 for refuse incinerators. Air monitoring was continued in the Cities of Calgary and Edmonton, and in the vicinity of sour gas processing plants. Five additional smoke monitors were placed in operation in Calgary and Edmonton. The monthly reports on the monitoring have been expedited by the setting up of 'programs' for the Electronic Data Processing Centre's computer which evaluates and correlates the data obtained. The monitoring of water quality in the rivers has been continued and has indicated the importance of this work, together with that of regularly assessing the amounts of pollutants released by industries and municipalities.

The Pollution Control Laboratory has carried out special studies, particularly on the long-term B.O.D. reactions and nitrification in the North Saskatchewan River. The regular work of analyzing samples related to the air and water pollution control and municipal engineering programs is increasing in both volume and detail. Some work was done

on special projects in co-operation with the Industrial Health Services Division of the Department and also the Departments of Lands and Forests, and Agriculture.

Three special projects were carried out during the year. The 'Study of Sewage Ponds' was completed in September and the report on the findings prepared. This was a three-year study and was a detailed assessment of the operating efficiency of the ponds and a critical review of the design criteria used. The second project was the study of 'Air Pollution Sources' in the Cities of Calgary and Edmonton. This was conducted by Mr. J. J. Rolston during the summer and included a tabulation of the sources of various types of air pollutants and an evaluation of their significance. The third project is a study of the use of bromine in swimming pools. This study is continuing and is designed to evaluate the cost, disinfection efficiency, and swimmer acceptance as compared to chlorination.

An outline of the work carried out by each section of the Division is presented below.

A. AIR AND WATER POLLUTION CONTROL

As in past years the work carried out in 1964 by the Air and Water Pollution Control Section was directed at controlling the pollution from new industrial plants locating in Alberta, assessing and reducing the pollution from various industrial operations and municipal sewerage systems already existing in Alberta, and assessing the degree of pollution in various rivers and streams and in the atmosphere. The work in this section during 1964 is reported in the two fields separately as follows:

1. Atmospheric Pollution

The staff of this sub-section consists of three engineers and four laboratory technicians and essentially they are all supervised by the 'Head' of the section. At present there are no vacancies in this sub-section.

(a) Operation of Mobile Atmospheric Monitoring Laboratories—

Two mobile air pollution laboratories were operated on a continuous basis during 1964. These units were used as in past years to investigate complaints and to observe general air pollution levels in the vicinity of gas processing plants and in oil field areas. Trailer Unit No. 1645 was operated for a total of 344 days and stood idle for 22 days for annual equipment overhaul. This unit was used to conduct 10 separate surveys in 7 different areas.

Trailer Unit No. 1585 was operated for 317 days and stood idle for 49 days because of moving the unit, mechanical difficulties with equipment and annual overhaul of the equipment. A total of 12 separate surveys were carried out in 11 areas.

In total for both units, 22 surveys were carried out in 16 different areas during the past year.

(b) Exposure Cylinder Surveys—

During 1964, twenty-four new exposure cylinder stations were established and five stations were abandoned. A total of 123 are in operation at the present and the cylinders in each are changed monthly and analyzed in the Pollution Control Laboratory.

Along with the exposure cylinder stations, and not necessarily at the same locations, a total of 49 dustfall samplers are maintained. This represents an increase of 11 over the previous year of which most were established to investigate local complaint problems. Three atmospheric fluoride monitoring stations are still being maintained as in past years.

(c) Approvals Issued for Expansion to Present Plants and to New Industries—

Approval of air pollution facilities was given for 12 new plants in Alberta after reviewing applications for their establishment. In addition 10 approvals were granted to plants which had already been in operation prior to 1964, but which were expanding or changing some of their previously established operations. In each case submissions were thoroughly reviewed before approval was granted.

(d) Incinerators—

The preliminary set of design standards set up in 1963 was reviewed in 1964 for the purpose of finalizing the standards which should be completed next year.

In addition to this, 28 applications for refuse incinerators were given approval for installation.

(e) Pollution Source Surveys—

Fourteen stack sampling surveys were carried out during 1964 at 12 different plants in Alberta. Seven of the surveys were carried out at sulfur plants for sulfur dioxide, while the other 6 surveys were for particulate matter.

In addition 14 tours to study plant processes for the express purpose of evaluating air pollution control facilities employed at the specific plants were taken.

Ringelmann Density Chart readings were also taken at a number of industries in Edmonton. Observations of smoke sources were made, as in the past year, from the roofs of the Administration Building and City Hall for the purpose of contacting the industries so that some corrective procedures would be taken to prevent recurrence.

(f) Effect of SO₂ Upon Vegetation—

In order to supplement previous years' data, studies of the effect of SO₂ upon vegetation was continued with the samples being obtained through the co-operation of the Department of Lands and Forests who collected some of the samples, while the remainder was picked up by the Division of Sanitary Engineering staff.

(g) Corrosion Study—

Some limited assistance was given to the Alberta Government Telephones in the continued study of corrosion.

(h) Special Studies—

Measurements of the oxides of nitrogen emission from the City of Edmonton Power Plant were made in order to try and verify some odor complaints and actual measurements obtained with the Department of Public Health oxides of nitrogen instrument at the Administration Building.

(i) Special Investigation—

The Scientific Advisory Committee on Air Pollution met on one occasion to finalize the findings in the Pincher Creek-Waterton areas.

(j) Maintenance and Calibration of Equipment—

During the past year a routine maintenance and calibration schedule was set up in order to prevent any major downtime in the operation of the air pollution monitoring equipment. This work is essentially carried out by our senior laboratory technician.

(k) A Study of Air Pollution Sources and Their Significance in Calgary and Edmonton—

The air pollution staff assisted a special consultant in evaluating the sources and their significance in the air pollution study of Calgary and Edmonton.

(l) Air Pollution Monitoring in Calgary and Edmonton—

During 1964 the air pollution monitoring in Calgary was expanded to include one additional smoke sampler plus two additional exposure cylinders and dustfall stations (included under the section of exposure cylinder surveys).

Monitoring in the City of Edmonton was also expanded on a greater degree than in Calgary. The program extension included four additional smoke samplers, one exposure cylinder station and several dustfall stations to evaluate local problems. The Edmonton expansion also included the continuous operation of the oxides of nitrogen instrument and the re-establishment of the operations of the oxidant instrument.

The purpose of these expansions is to fully evaluate the air pollution conditions in the two major cities in Alberta.

(m) Computer Program for Calgary and Edmonton Reports—

To facilitate the expansion program mentioned in (l) above, it was necessary that some method be employed to increase the speed at which monthly summary reports could be completed. It was found out from the Government Data Computer Centre that it was possible to write up a program for these reports, thus making allowable more manpower time for other projects of the Division. Following this through, the Division hired a special computer consultant and assisted him in setting up the computer program.

(n) Computer Program for Stack Calculations—

Since it is important that a number of different conditions be studied for ground level concentrations from the emission of pollutants from a number of new plants, it became advisable that a computer program be set up for this purpose. A staff member of the Division was able to set up such a program to facilitate our needs.

(o) Air Pollution Control in Calgary and Edmonton—

The five-year period allowed on the Air Pollution Control Regulations is rapidly coming to a close — September, '66. In order that industries may comply with these regulations, a program was instigated

in Calgary and Edmonton whereby industries exceeding the allowables in the regulations are notified of the existence of such regulations and their operations are reviewed in order that they may comply before the period of grace is past.

(p) Investigation of Complaints—

Twenty-two complaints of air pollution were investigated, studied and solution recommended where complaints were verified. These complaints were mainly in the Cities of Calgary and Edmonton, with most of them in Edmonton because of our location in this City.

(q) Lectures on Air and Water Pollution were given at two training courses:

- i. Petroleum Industries Training Service.
- ii. Municipal Engineering Training Course.

2. Water Pollution

The staff for water pollution surveys and investigations remains unchanged from 1963 with one engineer and one laboratory technician.

The control of water pollution is generally maintained through periodic regulatory investigations of municipal and industrial waste waters and routine sampling surveys on the major receiving water-courses. As in previous years, the primary concern during the winter of 1963-64 and 1964-65 to date has been for the quality of the North Saskatchewan River water, although additional emphasis has been placed on pollution of the Oldman River in Southern Alberta.

During the high water period, the release of ponded waste waters was controlled.

Observations of weed control programs in the three major irrigation districts in Southern Alberta were made during the early summer months. An experimental weed control program carried out by Calgary Power Ltd. on a small portion of Lake Wabamun was also observed.

As in 1963, the Division co-operated with the Fish and Wildlife Branch of the Department of Lands and Forests in their summer-long special study of the Bow River.

Measurements for organic contaminants in the North Saskatchewan and Bow Rivers continued at periodic intervals throughout 1964. The devices used for this purpose remained at Fort Saskatchewan and at Bassano.

A general outline of the work performed during 1964 is as follows:

(1) Rivers

- (a) North Saskatchewan—During the winter period grab samples were taken approximately on a weekly basis at the Edmonton water intake, Beverly Bridge, Fort Saskatchewan, Vinca Ferry, Duvernay, Elk Point, and Lloydminster Ferry. Brazeau Reservoir water and the North Saskatchewan River at Drayton Valley were sampled on only one occasion. Four carbon filters were set up at Fort Saskatchewan throughout the year to measure organic contaminants.

- (b) Bow River—In connection with a summer-long study of fish in the Bow River by the Department of Lands and Forests, two separate week-long sampling surveys were carried out on this River and the associated industries and sewage treatment plants. Carbon filters were also set up at Bassano on four separate occasions throughout the year.
- (c) Oldman River—Two separate sampling surveys were undertaken; one during the fall and the other during the winter of 1963-64.
- (d) Athabasca River—During the winter period this stream was sampled on a monthly basis upstream from Hinton, near Obed, at Whitecourt, at Smith, and at Athabasca. Periodic sampling of the River has recently commenced at the Great Canadian Oil Sands project north of Fort McMurray.
- (e) Red Deer River—One sampling survey was carried out near the first part of 1964 in which samples were taken at Red Deer, Nevis, and Drumheller.
- (f) Blindman River—Grab samples were taken in the Rimbey area on two occasions during the year.

(2) Industries

- (a) Chemcell Ltd.—One 24-hour composite sampling survey during the early part of 1964 and two grab samples taken during the remainder of the year.
- (b) Canadian Industries and Building Products—One 24-hour composite sampling survey during early 1964 and four grab sampling surveys at periodic intervals during the rest of the year.
- (c) Naugatuck Chemicals—Three grab samples over the year.
- (d) Edmonton Oil Refineries—One 24-hour composite sampling survey in the early part of 1964. During the winter period grab samples are taken approximately on a monthly basis.
- (e) Sherritt-Gordon—One 24-hour composite sampling survey and two grab samples were taken.
- (f) Dow Chemical—One 24-hour composite sampling survey and one grab sample during 1964.
- (g) Edmonton Barrel—Tests on effluent were made by Alberta Research Council to develop waste treatment methods. No samples were taken for pollution control work.
- (h) Calgary Oil Refineries—Two 24-hour composite sampling surveys were made during 1964.
- (i) Canadian Sugar Factories—Two 24-hour composite sampling surveys were made during the fall of 1964.
- (j) Northwestern Pulp and Power—Composite sampled on approximately a monthly basis during the winter period and occasionally during the summer months.
- (k) B.A. Gas Plant at Rimbey—Grab sampled on four separate occasions during 1964.

(3) Sewage Effluents

- (a) Edmonton Sewage Treatment Plants — During the winter of 1963-64 samples were taken weekly at the Main Plant and occasionally at the #3 Plant. During the winter of 1964-65 to date, samples have been taken at both plants on a weekly basis.
- (b) Calgary Sewage Treatment Plants — Two 24-hour composite sampling surveys were carried out at these plants during 1964.
- (c) Southern Alberta Sewage Treatment Plants — Two composite sampling surveys were carried out during 1964 on plants at Lethbridge and Taber.

Several other industrial and domestic wastes and receiving streams were sampled throughout the year, but these were of a minor nature and were taken mainly for information.

B. MUNICIPAL ENGINEERING

General

During 1964 increased activity was noted in the construction of water and sewerage projects and swimming pools. With the increase in the number of submissions and the loss of a staff member it has not been possible to assist operators to the extent desired and carried out in the preceding year. Visits to communities were restricted to 'problem' areas and 90 out of 238 communities having water and/or sewerage were inspected.

There has been an increase in the demand upon plant evaluation and assistance in operation, thus more samples have been collected for analysis by our Pollution Control Laboratory. A breakdown of these tests is shown in the following table:

Type of Sample	River, Tap, Well, etc.	Drinking Water for Fluorides	Sewage	Miscellaneous
No. of Samples Tested	49	51	76	2

This represents a 34% increase in the number of samples collected and analyzed over 1963.

Staff

The duties of the section have been carried out by two engineers. This decrease in staff is due to the resignation of the 'Head' in January without a new staff appointment until October. Mr. Briggs, the new 'Head' of the Municipal Engineering Section left in October on a year's leave to obtain his Master's in Sanitary Engineering at the University of Alberta.

Schools

The annual school for operators of waterworks and sewerage systems was very successful. Two of the four schools were held this year with an attendance of 35 and 44 for the second and third year schools respectively. Attendance figures to date for these schools are as follows:

- (a) Completed 1st year course ----- 305
- (b) Completed 2nd year course ----- 245
- (c) Completed 3rd year course ----- 180
- (d) Completed graduate course ----- 86
- (e) Number of different systems represented 158

Waterworks and Sewerage Systems

The following tables give information on the 1964 waterworks and sewerage construction:

A. New Systems

	Provisional Certificates		Final Certificates	
	No. Issued	Estimated Cost	No. Issued	Estimated Cost
Water	8	\$ 776,660	11	\$ 900,219
Sewer	10	630,570	8	380,850
Total	18	\$1,407,230	19	\$1,281,069

B. Extensions to Existing Systems

	Provisional Certificates		Final Certificates	
	No. Issued	Estimated Cost	No. Issued	Estimated Cost
Water and Sewer				
Mains	21	\$1,214,121	123	\$28,819,681
Water Supply and				
Treatment	10	590,285	11	376,040
Trunk Sewers and				
Treatment	4	453,882	11	1,715,852
Storm Sewers	3	361,100	16	1,565,844
Total	38	\$2,619,388	161	\$32,477,417
Grand Totals				
A and B	56	\$4,026,618	180	\$33,758,486

There were 245 certificates issued, of these 9 were superseded. The valid certificates issued included 56 provisional certificates and 180 final certificates.

The table below shows the estimated spending on water and sewer construction for the years 1953 to 1964 inclusive. Also shown is the number of final certificates issued which give an indication of the number of submissions for this work in the Province.

Year	No. Issued	Estimated Cost	Year	No. Issued	Estimated Cost
1953	97	\$12,465,396	1959	160	\$15,733,142
1954	109	16,455,810	1960	189	16,820,264
1955	107	17,524,020	1961	172	18,876,977
1956	99	15,803,965	1962	184	9,427,465
1957	110	11,430,812	1963	146	8,818,845
1958	132	9,795,223	1964	180	33,758,486

On December 31, 1964, there were 238 communities in Alberta with waterworks and/or sewerage systems in operation or under construction. There were 203 communities having both systems, while 217 and 224 communities are served by waterworks and sewerage systems respectively.

The communities in which waterworks and sewerage systems were installed are:

Community	Systems	
	Waterworks	Sewerage
Burdett .....	..	1
Dewberry	1	1
Donalda	1	1
Eckville	1	..
Glenndon	1	..
Glenwood	1	..
La Glace .....	..	1
Lamont	1	..
Nampa	1	1
Paradise Valley	1	1
Torrington	1	1

Fluoridation

The fluoridation of public water supplies continued to grow at a slow pace. Controlled fluoridation equipment was installed and commenced operation in three communities in Alberta during 1964 raising the total number to 16 now fluoridating their municipal water supply.

Year of Installation	Community Fluoridized	Population	Year of Installation	Community Fluoridized	Population
1958	Fairview	1,777	1962	St. Albert	8,583
	Red Deer	24,446		Leduc	2,846
				Athabasca	1,634
				Ft. Saskatchewan	3,766
1959	Grande Prairie	10,365	1963	Ralston	2,000
	Devon	1,423		Peace River	3,318
				Coaldale	2,592
1960	Innisfail	2,575	1964	Milk River	829
				Redwater	1,135
1961	Bonnyville	2,124		Barrhead	2,696

The total population served by controlled fluoridation is 72,109. This represents 7.3% of the urban population.

Swimming Pools

Approvals were issued for 26 new swimming pools. The type and number of pools are shown in the table below:

Number of Approvals	Public Pools			Semi-Public Pools		Apartments
	Indoor	Outdoor	Inst.	Clubs	Motels	
	1	4	3	4	9	5

Regulations and Standards

The Regulations Respecting Swimming Pools and Bathing Places (Division 13, 1960) were revised and printing made in three forms:

- Regulations Respecting Swimming Pools (Division 20, 1964)
- Regulations Respecting Bathing Places and Man-Made Beaches (Division 21, 1964)
- Swimming Pool Design and Operating Standards—First Edition, February, 1964

The second edition of the swimming pool design and operating standards has been approved and is to be printed in early 1965.

Other Areas

The project "Bromination of Swimming Pool Waters" was begun in October. The specific aim of this project will be to obtain definite information on the practical aspects of Bromination as a swimming pool disinfectant including required dosages and residual for effective disinfection and swimmer acceptance. Thus far base line information on chlorination has been obtained.

The staff is continuing to supervise the correspondence course for water treatment plant operators as supplied by the Western Canada Water and Sewage Conference.

C. POLLUTION CONTROL LABORATORY

The Pollution Control Laboratory carried out the chemical analyses of samples pertaining to the Air and Water Pollution programs and the Municipal Engineering program. The samples analyzed were:

1. STREAM POLLUTION

	No. of Samples
River Water	255
Industrial Waste	212
Sewage	71
Carbon Filter	10
Total	548

2. AIR POLLUTION

	No. of Samples
SO ₂ —Cylinders	1,254
H ₂ S—Cylinders	1,231
Total Dustfall	450
Ca in Dustfall	135
Fluorides in air	32
Sulfur in Dustfall	62
Total Oxidants in air	252
Total Particulates on High Volume Samples	89
Organics on High Volume Samples	56
Total Sulfur in Vegetation	431
Stack Samples (SO ₂ + SO ₃)	38
Misc.	25
Total	4,055

3. MUNICIPAL ENGINEERING

	No. of Samples
River, Well, Tap Water, Swimming Pool	49
Fluoride	51
Sewage	76
Miscellaneous	2
Total	178
Overall Total	4,781

Once again this figure shows an increasing trend in analytical laboratory work. The overall total figure of samples handled for the previous year 1963 was 4,219.

In addition to the work mentioned above the following special studies were carried out:

- (a) With respect to the Water Pollution Control program, three special surveys were performed. Two of them covered long-term observations (up to 60 days) of the North Saskatchewan River at different locations, both up and downstream. The main purpose of these observations was to show the influence of nitrogenous compounds to the Biochemical Oxygen Demand of the river. The collection of the samples as to these two surveys took place during the months of March and October.

The third investigation was carried out in order to receive the first results as to a long-term (60 day) Biochemical Oxygen Demand of the waste effluents of Chemcell Ltd., Edmonton. The sampling took place in the month of July.

- (b) Fifty-nine analyses of lichen samples as to their total sulphur content were performed in connection with some surveys which Mr. D. Stelfox of the Crop Clinic, Department of Agriculture, carried out. This figure is included in the above indicated overall number of analyzed vegetation samples.
- (c) Assistance was given to the Industrial Hygiene Section of the Department of Public Health in 'spot' sampling and testing of styrene, formaldehyde and ammonia in the air at three different locations in the City and at Fort Saskatchewan.
- (d) During the summer, assistance was given to the Veterinary Laboratory of the Department of Agriculture in the testing of sulfur dioxide in connection with its surveys as to the influence of this gas on animals, especially pigs.

During the year 1964, the number of staff in the Pollution Control Laboratory was the same as in 1963—2 chemists and 2 technicians.

D. PUBLIC HEALTH INSPECTION

In 1964 there were positions for 70 Public Health Inspectors in the Provincial Department of Public Health, City Health Departments and Health Units. There were some vacancies at the year end, but for the most part these were not of long standing. Several positions were filled by Student Inspectors training under qualified Inspectors. Local Health Authorities appeared to be taking an increased interest in the training of Inspectors. Problems in obtaining suitable persons to fill vacancies have therefore been reduced from recent years.

Five Student Public Health Inspectors wrote the examinations leading to the Certificate in Public Health Inspection (Canada) in November. These men were employed by Health Authorities in various parts of the Province. At the time of preparing this report examination results had not been received.

Although a few communities showed interest, no compulsory pasteurization by-laws were passed in 1964. Forty-one cities, towns, and villages have such by-laws in effect. This is by no means indicative of the consumption of pasteurized milk. It is estimated that 95% of the milk retailed in the Province is pasteurized.

At the beginning of 1964 there were 71 plants engaged in pasteurizing milk in the Province. No plants were opened during the year, but six plants located at Bonnyville, Brant, Canmore, Chipman, Excel and Lac La Biche discontinued pasteurizing fluid milk. In each case alternative supplies of pasteurized milk are available.

Local Boards of Health suspended or refused eight restaurant permits. This compares with 5 in 1963, 8 in 1962, 7 in 1961, and 24 in 1960. Permits were issued or reinstated as soon as necessary measures for the protection of public health were completed.

The three Provincial Public Health Inspectors were active throughout the year in programs related to environmental health. Continuing activities included a public health inspection program in areas outside Cities and Health Units, a radiation hazards protection program and technical supervision of swimming pools. Other important activities included air pollution investigations, participation in health education and in-service training programs, special surveys and participation in the activities of Boards and Committees.

Six hundred and ninety-seven public health inspections were made in 1964. This is comparable with 643 in 1963 and 679 in 1962. Included are inspections at restaurants and other food handling establishments, hotels, motels, trailer parks, suites and apartments, construction camps and swimming pools. Also included are inspections made at public and private sewage disposal systems and at wells and other sources of public and private water supply. Most of these inspections were made outside Cities and Health Units and assisted local authorities by providing some public health inspection service.

A total of 152 inspections were made in the radiation hazards control program. There were 130 in 1963. These included inspection and approval of new devices incorporating radioactive materials and the supervision of incidents and accidents involving radioactive

materials. There are approximately 95 users of isotopes in the Province including 17 new licensed users for 1964, and two users were discontinued. One user's license was suspended following a series of over exposures. This license was reinstated when it appeared that satisfactory control would be provided. A radium source was inadvertently brought into the country in second-hand equipment. This was discovered and safely removed under supervision. Following requests, visits were made to industrial x-ray and fluoroscope users. Shielding and operating improvements recommended by the Inspector were subsequently adopted. Dissatisfaction in the oil well-logging industry resulted in a meeting being arranged between representatives of the Radiation Protection Division of the Department of National Health and Welfare and representatives of the industry. The main outcome of the meeting was the introduction of a 'Code of Practice', which has been enthusiastically received.

The Division continued a program designed to provide advice and assistance with technical problems to swimming pool operators. In this program the Public Health Inspection Section co-operated closely with the Municipal Engineering Section. Inspections were made at a number of swimming pools to ensure that equipment was being used to the best advantage. The Division prepared a 51-page manual which was supplied to pool operators. This manual appears to have filled a need for a publication which would help operators to understand the technical side of swimming pool operation. A Public Health Inspector had a considerable role in the preparation of the manual.

The Public Health Inspection Section co-operated with the Air Pollution Control Section of the Division in a survey of sources of air pollution in the City of Edmonton.

The semi-annual In-Service Training Course for Public Health Inspectors was held at the Sportex Building in Edmonton during October. A large part of the time was given to consideration of pesticides. The Division of Industrial Health Services co-operated in that part of the course. In view of the material being presented, the Agricultural Field Supervisors were invited to participate as well as the Public Health Inspectors. About 120 persons enrolled in this course. Preparation of the course, etc., was one of the major activities of the Public Health Inspection Section.

The Provincial Public Health Inspectors participated in several Health Education programs. Included were lectures to appropriate groups on radiation hazards; lectures on sanitation in disaster; lectures on swimming pool equipment, operation and maintenance; and lectures on sampling techniques. The number of requests for lecturers appears to be increasing.

During the year the Public Health Inspection Section made sanitary surveys in the Hamlets of Tomahawk and Wabamun in connection with proposals to install public waterworks and sewerage systems. A report was prepared for the Provincial Board of Health on the operation of waste disposal grounds in the Edmonton area.

The Public Health Inspectors of the Division continued to be active on various Boards. The Chief Inspector continued to act as Secretary of the Provincial Board of Health. He also served as Chairman of the Provincial Examining Board, examining candidates for the Certificate in Public Health Inspection (Canada). Inspectors serve on

the Board of Administrators of the New Town of Swan Hills and on the Pembina Planning Advisory Committee. They also serve on Technical Committees established in co-operation with the Alberta Dairymen's Association to examine various matters of concern to the dairy industry.

The Provincial Public Health Inspectors were engaged in a diversified program in the field of public health throughout the year. These activities were directed to reduce the spread of disease and to increase the comfort of citizens of the Province.

E. PLUMBING INSPECTION

The Plumbing Inspection Section of the Division of Sanitary Engineering received during 1964 a revenue of \$12,482.75 in the form of plumbing permit fees. This is an increase of 24.2% over the previous year. The number of plumbing permits issued increased by 15.5% to a yearly high of 1,090. The number of plumbing fixtures installed throughout this province totalled 166,075. The value of the plumbing installed is estimated to be approximately 41.5 million dollars.

The number of individual types of fixtures installed was as follows:

Water Closets	42,106	Lavatory Basins	43,308
Baths	28,615	Sinks	30,618
Laundry Tubs	2,207	Special Fixtures	19,221

The number of privies eliminated as a result of plumbing being installed was 729.

The plumbing inspectors of this Division, in co-operation with the Agricultural Engineering Branch of the Division of Extension of the Department of Agriculture lectured at six meetings. These meetings indicate that the farmer as well as the urban home owner is interested in modernizing his dwelling by installing a proper plumbing system. The attendance, as well as the interest displayed by those attending these lectures, is always very gratifying.

During 1964 this Section received requests from twenty-nine towns and villages to have their plumbing inspections made by Provincial Inspectors. It is becoming obvious that the smaller towns and villages are realizing that it is to their advantage as well as to the advantage of their citizens to have a competent person inspect all plumbing installations, therefore it is expected that many more requests for our services will be received.

The Provincial Plumbing Advisory Board held four meetings during the year and studied submissions as presented by fourteen manufacturing and distributing firms. Of this number of requests for approvals, the Board extended approvals for three items and temporary approvals for five other items. The temporary approvals are for a one year period after which a reappraisal will be given to the affected items.

It is our observation that a tremendous increase is being made in the number of dwellings, schools, trailers, motels, etc., which are being built in prefabricating plants with final erection in any area of the Province. All of these units have a plumbing system installed at the factory, therefore much time is being spent in inspection services in plants performing the construction of such units.

During 1964, this Section received more permit fees, issued more permits and completed more inspections than in any previous year and all indications point to an equally good 1965.

F. SPECIAL PROJECTS

Three special projects were carried out in 1964 to assess in detail specific subjects of public health interest.

The second study on sewage pond operations was concluded in September and the summary report on this study was completed. This study evaluated the operation of both the 'short detention' or 'anaerobic' ponds and the 'long' or 'aerobic' ponds as well as systems using both types. The findings have indicated that a very high degree of treatment is accomplished during the summer season where the combined anaerobic-aerobic ponds are used. The efficiency of the aerobic ponds is quite low during the winter season. The anaerobic ponds give a relatively good degree of treatment in both the summer and winter seasons, and odor problems at these have been quite small.

A study of the use of 'bromine' as a disinfectant in swimming pools was commenced at the indoor pool at Red Deer. Initially an evaluation of the efficiency, cost and 'swimmer acceptance' of chlorine is being carried out. It is expected that the use of bromine will be commenced in early 1965.

A special study of 'Air Pollution Sources' in Calgary and Edmonton by a consultant, Mr. J. J. Rolston, was made in the summer period. Detailed tabulation of sources and the estimated amounts of various air pollutants and an evaluation of the significance of these was completed. A report on the study was completed for both Calgary and Edmonton. Copies of this report were forwarded to the City Councils, senior City staff, and to the major industries in each City.

DIVISION OF INDUSTRIAL HEALTH SERVICES

H. Siemens, M.Sc., M.D., Dr.P.H., D.I.H., Director

Early in the year this Division, with the co-operation of other Divisions of the Departments of Health and Agriculture, prepared "Regulations Respecting the Use of Pesticides" under The Public Health Act. These regulations after a few necessary amendments will constitute a beginning in the control of the use of these chemicals by Commercial Applicators and it is hoped will reduce the incidence of intoxication.

In October, staff members of the Division participated in a short course on the use of Pesticides given largely for Public Health Inspectors and Field Supervisors of Counties and Municipalities. Other participants came from the Field Crops Branch and the Veterinary Services Branch of the Department of Agriculture, the Public Health Inspectors, Commercial Applicators and Salesmen of Pesticides, the Entomology Department of the University of Alberta, and Federal Departments of Government.

Subsequently, the Department of Extension, University of Alberta, agreed to organize a correspondence course that can be taken by new candidates prior to applying for the Commercial Applicator's License to apply pesticides in Alberta.

In February, Messrs. C. R. Ross and L. Rispler, Engineers of the Occupational Hygiene Division, Department of National Health and Welfare, spent ten days with us during which they did some sampling of printing shops, paint shops, auto body shops and battery repair shops for lead dusts and fumes. No levels exceeding those permissible were found at the time. They also did noise level measurements at several plants in Edmonton and north of Edmonton. Here excessive levels were found and some have since been dealt with. The advice and helpfulness of the Federal Department and its facilities are much appreciated.

A number of industrial plants were surveyed by us for hazardous noise levels. Such levels were found in several situations and their deleterious effects were established by audiometry on workers who showed varying degrees of permanent hearing loss in the 4,000 to 6,000 cycles per second range. Much work is required to define the size of the problem, and standards for the protection of those exposed will have to be determined.

On July 24, 1964, Dr. H. Buchwald joined our staff as Chief Industrial Chemist. He has been busy with the acquisition of instruments and materials necessary for the assessment of plant and process environments. He has done some of the investigative work mentioned above, some silica dust determinations, noise measurements, and participated in programs of instruction. He has also done some survey work and has become acquainted with the majority of men here who can be of assistance to us. It is hoped that our laboratory may be set up and operating by the end of March. This should greatly facilitate our work, particularly that involving the determination of the concen-

tration of mists, vapours, fumes, gases, and toxic dusts in certain industrial establishments. In this field Mr. Kortsch of the Sanitary Engineering Division has been of great help to us with a number of problems requiring early attention.

Our major effort during the year was centred about a chest survey of workers in dusty trades in Alberta. The Alberta Tuberculosis Association provided the instruments and materials needed for pulmonary function screening tests. The Division of Tuberculosis Control co-operated in the planning of the project and made X-ray facilities and radiological interpretation available. The Pulmonary Division of the Department of Medicine, University Hospital, participated in the planning and took an active part in the interpretation of information collected.

By the end of 1964 we had completed lung function tests and questionnaires on 913 workers in dusty trades including information on the type of work involved, the length of exposure, height and age of the subject, smoking history, presence of cough and phlegm production, presence or absence of shortness of breath, wheezing, working time lost through chest complaints in the past three months, and past chest illnesses such as bronchitis, pneumonia, asthma or pleurisy. Seven hundred and forty-five subjects were X-rayed using 14" x 17" films. Most of the remaining 168 subjects we hope will be X-rayed in 1965 to complete the survey.

Significant numbers of these workers showed evidence of impaired lung function, not nearly all confirmed by X-ray. The films, questionnaires and lung function charts are now under study by the Radiology Department, University Hospital and the Pulmonary Division, Department of Medicine, University Hospital. While a final evaluation will not be available at once, we have sufficient evidence to indicate the need for the institution of a program of pre-employment or early employment and periodic examination of all workers in the dusty trades along lines similar to those used in this survey. A baseline of health status plus subsequent periodic examinations is useful for assessing responsibility. As well as indicating chest damage to workers, resulting from certain occupations, such information indicates where special emphasis on sound occupational hygiene principles must be placed to reduce the health hazard of the occupation.

Many details of our program remain to be worked out as we progress. Care will be exercised to ensure that it complements rather than competes with services already available through other Divisions and agencies.

CIVIL SERVICE NURSING BRANCH

K. E. Jorgensen, R.N.

As each year passes the rate of the increase in knowledge of better health practices amongst the general public accelerates. Unfortunately, the knowledge is too frequently given second place to individual desires and we find that the ailments which cause the most absenteeism in the Civil Service show little decline. The year of 1964 has brought in but few changes in the activities of this branch but the records reveal work is increasing.

The respiratory conditions, as usual, greatly outnumber the other ailments. The allergy type, we have been informed, has often been traced to the use of hair sprays. Rashes are quite prevalent, especially those due to allergies and nervous tension. There has been proportionately few communicable diseases reported.

To our knowledge there was only one new case of active pulmonary tuberculosis. As a result we assisted the Tuberculosis Division in testing the contacts.

Number heaf tested	271
Positive reactors x-rayed	120
Number for x-ray in 6 months	45

On request we gave tests to another branch.

Number heaf tested	372
Positive reactors	127
Active cases	0

Patch tests were occasionally given and patients were referred to their doctors when indicated.

Two ex-patients were readmitted to the Aberhardt Memorial Sanatorium for further treatment. The routine tests and x-rays for the contacts, followed.

The mentally disturbed are still increasing in number. Many are under medical care; some are hospitalized at intervals and some are institutionalized. The majority of these cases appear to be the younger female staff (18 - 30 year group). We find many are on some type of sedation and may also, through injudicious use of it, resort to 'wake-up' pills. Clearly something is missing. Could the lack of self-discipline together with the lack of accepting individual responsibility be accountable to a large extent for our present mental health situation to-day?

Problems of obesity are not infrequent. It is quite apparent that many of the more serious 'overweight' cases do not realize the dangers involved. Until they are willing and able to see their respective doctors, we encourage correct dieting and, in some cases, exercises. We do not overlook the minor problems of overweight lest they reach the more serious stages.

In our individual and group contacts we continue with our usual health teaching.

This year we have acquired a new sick room on the second floor of the Land Titles building. This accommodation has been needed for several years and it is certainly appreciated.

The number of 'emergency rooms' in use at the present time are:

Administration Building	2
Legislative Building	1
Terrace Building	2
Highways Building (with 2 beds)	1
Auditorium	2
Land Titles Building	1
Public Works Building	1
Improvised rooms (in various buildings)	8

The School for the Deaf has one complete unit with one full-time nurse and the School of Technology has a complete unit with a part-time nurse.

We extend our sincere thanks to those who have so willingly assisted the sick and the injured in the various departments.

This year 185 employees were given transportation. This would include the acutely ill, injured and those with a communicable disease.

The following statistics will reveal the year's work:

Month	Office Calls	Home Calls	Compen- sation	Certificates
January	492	58	9	56
February	451	43	5	32
March	436	69	6	42
April	460	32	8	36
May	438	42	9	21
June	492	28	6	21
July	441	28	10	22
August	383	30	6	19
September	469	40	11	35
October	508	44	8	37
November	486	41	9	36
December	539	68	8	35
1964	5,595	523	95	392
1963	5,102	539	120	341

DIVISION OF ARTHRITIS SERVICES

R. K. Thomson, B.Sc., M.D., R.C.P.(C.), F.A.C.P., Director

The Division of Arthritis, with clinics at 9815 Jasper Avenue, Edmonton, and 2104 - 2nd Street S.W., Calgary, accepts patients up to the age of twenty-five years. There has been no change in policy during the year 1964.

As will be seen from the statistical report which is shown below, there is no essential change in the number of new cases seen during the year. It is possible that a number of new cases of Rheumatoid Arthritis may be seen by the consulting pediatricians in the Province, but it is our impression that the great majority are referred for consideration by the clinic. The range in age at onset remains the same, but we are impressed by the number of very young children who show up with Rheumatoid Arthritis.

Newer chemical agents for the treatment of Rheumatoid Arthritis are used, as necessary. It was indicated a year ago that one might anticipate an increase in the surgical procedures for the correction of deformities. This appears to be the case but it will take some time before actual figures can be obtained. Long-term active physiotherapy with basic rest and medication are still the primary treatments.

STATISTICAL COMPILATION OF CASES TREATED IN 1964

	Edmonton	Calgary	Total
Initial examinations made	16	2	18
Repeat examinations made	61	9	70
Rheumatoid Arthritis cases in 1964—NEW	16	2	18
Total Rheumatoid Arthritis cases under the Division of Arthritis	126	55	181
Hospital days	794	550	1,344
Physiotherapy treatments	319	48	367

TREATMENTS

January 1st to December 31st, 1964

Hospital days	1,344
Clinic and office visits	109
Physiotherapy treatments	367
Other: including surgical, injections and special procedures	162
Total Treatments	<u>1,982</u>

DIVISION OF CEREBRAL PALSY CLINICS

G. P. Mores, M.D., Director

Of primary significance in 1964 was the continuing success of the convergence in concept and purpose of the Edmonton Cerebral Palsy Clinic and the Glenrose Provincial General Hospital.

An entirely satisfactory quality of service has been provided by the Division, often under difficult conditions, many of which were unavoidable or the result of an increase in the demands for complex treatment. Shortage of space and under-staffing is no less a problem than in previous years, and should perhaps be accepted as the normal state of affairs for some time to come.

Dr. G. P. Mores was appointed Director of the Division of Cerebral Palsy Clinics, following the resignation in April, 1964, of Dr. F. G. Day.

Since the Edmonton Clinic and the Calgary Clinic operated under different conditions, the two centres are herein reviewed separately.

Edmonton Cerebral Palsy Clinic

Dr. J. K. Martin, who previously served as Pediatric Consultant, was appointed Clinical Director of the Multiple Handicapped Children's Unit of the Glenrose Provincial General Hospital and the Cerebral Palsy (Edmonton) Division. The responsibility of the clinical program at the Cerebral Palsy Treatment Centre was transferred to the Glenrose Provincial General Hospital on May 1, 1964.

Eight consultants were named consisting of four paediatricians and four orthopedic specialists. The consultants worked in pairs each Friday morning at the Cerebral Palsy Clinic. All new patients were assessed by the therapists and doctors, and a treatment program planned as indicated.

On one Friday each month a re-assessment clinic was held at which time four children attending this centre for therapy and education were seen. These children had a psychometric examination by the Child Guidance Clinic and an assessment by each therapist, the social worker and the teacher preceding their examinations by the consultants and the physiatrist (Dr. Lynn Bashow) on Friday morning. All reports were assembled and a conference held on each child in the latter part of the morning. The findings were imparted to the parents, who were requested to be present for these assessment conferences.

Although these re-assessments were time consuming, they achieved the objectives of detailed planning of the child's future and co-ordinating the work of the individuals responsible for the child's care. Thus, a team approach to an individual's problems has been inaugurated resulting in greater efficiency of care, and based on the whole individual rather than specific facets of his condition. The parents' co-operation and understanding have been enhanced. The ultimate goal must remain that of re-integrating these children into society.

The physiotherapy department has been served by three full-time therapists and one attendant for the major part of the year. The Bobath method of treatment continues as of June, 1963.

The occupational therapy department has increased its services since the employment of a second occupational therapy aide, but the services of a second occupational therapist are required. There appears to be less emphasis on the Bobath method of treatment and an increased awareness of the practical and functional approach in the occupational therapy department.

Dr. Bashow's presence has been appreciated at the monthly re-assessment conferences. There still remains the need for increased services by the physiatrist to supervise the work of the therapists. The staff of the Cerebral Palsy Clinic became Glenrose Hospital employees on April 1, 1964. The situation will improve in August, 1966, when the Cerebral Palsy Treatment Centre is moved to the proposed Glenrose Handicapped Children's building. The present geographic separation of the out-patient and in-patient services carries with it certain problems, which are uneconomic in personnel and time.

The speech therapy department operated for 7 months only due to lack of staff. As was estimated, one speech therapist cannot adequately serve the Cerebral Palsy Centre, and with increased staff it is hoped additional help will be available.

The social worker has made a significant contribution to the work of the clinic. The case load has been heavy and additional services are required in this area.

Since the organizing of the assessment clinics for the Multiple Handicapped Children's Unit was added to the duties of the office staff, it became necessary to increase the clerical staff.

The certified nursing aides and attendants have reached the maximum of their work load that they can safely handle and still provide adequate care.

We are presently screening the files and having school age children assessed for school readiness by the Provincial Guidance Clinic. It appears that we will have sufficient pupils to warrant an additional teacher.

There was only one member of last year's teaching staff who did not return. Our present teaching staff is dedicated and most co-operative. We are fortunate to have the assistance and co-operation of the Special Services Division of the Edmonton Public School Board and the principal of Belgravia School.

The staff of the Cerebral Palsy Clinic has worked hard and devotedly during the year. More efficient use of their time has been achieved and the co-operation of all working as a team has been enhanced.

Under existing conditions the maximum work load has been reached. In the new centre at the Glenrose Hospital, plans have been completed for caring for 120 children on a daily basis. Children with defects other than cerebral palsy will be included, in cases where no alternative facilities exist for their medical care and education. In order to make this transition, during the next 18 months children with other disabilities than cerebral palsy will have to be assessed and, as space and staff allow, be included in the present program.

Calgary Cerebral Palsy Clinic

The 1964 construction program, which was completed in December, provided additional space for consulting rooms, office and administration, and a playroom.

In September the medical staff was enlarged. Dr. T. A. Richardson was appointed Clinical Co-ordinator of the Clinic, as well as Orthopedic Consultant. Three additional orthopedic specialists and four pediatricians were also appointed. Morning clinic sessions were held on the first four Thursdays of each month. These were attended by an orthopedist and a pediatrician working as a team and in rotation with the other teams.

Although the four teams of medical consultants added greatly to the breadth of professional knowledge available to the clinic, the benefit was considerably diluted by the small number of patients actually seen by them.

A psychiatrist, appointed to the clinic in the capacity of a consultant, to augment in a direct and personal manner the more general service given by the Child Guidance Clinic, is recommended.

The Calgary School Board increased the teaching staff by one, bringing to three the number of teachers providing academic instruction. The schooling has been provided on a half-day basis. In November, the Parents' Association met with the Honourable Ministers of Health and Education and approval was obtained to purchase a portable classroom, which will be placed adjacent to the clinic.

Hereto follows a statistical review of the activities of the Division's Clinics in 1964:

	Edmonton	Calgary
Number of examining clinics	41	75*
*(includes clinics by "Assessment Unit" prior to September 1)		
Total number of cases examined by:	305	244
(a) Pediatrician	111	42
(b) Orthopedic Surgeon	301	218
(c) Physiatrist	24	....
(d) Psychiatrist .....	....	15
Number of new cases	60	43
(a) Cerebral Palsy	47	43
(b) Pending	2	....
(c) Miscellaneous	11	....
Number of active cases	310	340

Physiotherapy Department

Number of cases benefiting	169	93
Number of cases on physio home program	113	53
Number of cases assessed (only)	15	22
Number of cases rechecked (only)	14	9
Number of treatments	3,689	2,830
Total physiotherapy assessments	145	....
Total parent instructions	397	246
Muscle tests	2	....
Movie demonstrations	63	....

Progress of cases treated:

Body symmetry	14	....
Relaxation .....	....	3
Co-ordination (general muscle control)	7	1
Head control	19	1
Sitting balance	6	8
4-point kneeling	8	10
Kneeling balance	5	10
Crawling .....	....	4
Standing balance	9	16
Standing tolerance (braced) .....	....	6
Walking (a) with help (braced) .....	....	5
(b) with help (unbraced) .....	....	1
(c) in walker .....	....	2
(d) in parallel bars .....	....	5
(e) with canes .....	....	1
(f) unaided (braced) .....	....	4
(g) unaided (unbraced) .....	....	4
(h) balance improved	6	9

General improvement:

Considerable gait improvement .....	....	17
Minor gait improvement .....	....	4
Deformities reduced	26	3
Minor activity increased	22	6
Co-operation gained	17	....
Group muscle control .....	....	7
Wheelchair activities .....	....	5
Postural improvement .....	....	3
No progress	8	6

Bracing:

(a) for control (for first time)	8	6
(b) for control (continued)	24	26
(c) removed	1	3
(d) increased .....	....	2
(e) special equipment	5
(f) corrective shoes	44	8
(g) casts and splints	24

<i>Surgery</i>	19 cases	25 cases
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Occupational Therapy Department

Number of cases benefiting	179	77
Number of treatment sessions	3,795	5,733
Number of parent instructions	218	81
Assessments	34	23
Initial examinations	72	25
Psychological problems	25	16
Non-distractibility programs	27	15
Upper limb braces and appliances	3	7

Activities of daily living:

(a) dressing	71	32
(b) feeding	26	18
(c) other (toilet, wheelchair, bathroom, kitchen, household)	5	14

Upper limb function:

(a) range and duration of used movement	61	....
(b) co-ordination (including hand to eye)	73	25
(c) relaxation .....	....	7
(d) laterality .....	....	7

Special skills:

* (a) handicrafts and hobbies	28	21
(b) typing	12	13
(c) writing, pre-writing (including motor and perceptual difficulties)	36	13
(d) reading	4	5
(e) laterality testing and training	4	....
(f) Home Economic training	6	....
(g) gardening	4	....
(h) prevocational assessments	3	....
(i) vestibular sense and body scheme training .....	....	15
(j) remedial games for specific muscle groups .....	....	9
(k) perceptual training .....	....	8
(l) visual aids .....	....	10

*Painting, drawing, stool seating, mosaic tiling and design, sewing, dressmaking, basketry, weaving, rug making, leatherwork, paper designing.

Speech Therapy Department

(Edmonton—7 months)

Number of cases benefiting	29	69
Number of treatments	475	1,829
Number of parent interviews	73	187
Number of cases on home program	13	5
Number of assessments	133	....
Speech and language assessments	116	31
Audiometric tests	17	9
Pre-speech activities	3	....
Articulation	17	37
Voice training	8	....
Respiration	5	13
Emotional problems (stammers, etc.)	2	8
Phonetics	4	10
Supervision in Clinic .....	....	7
Language (comprehension)		
(a) oral	2	10
(b) lip-reading	3	5
Language (expression)		
(a) verbal	7	23
(b) non-verbal	8	....
(c) voice training .....	....	13
General Improvement:		
(a) considerable	2	3
(b) satisfactory	21	53
(c) little or no progress	6	13

Social Service Department

(Calgary—4 months)

	Edmonton	Calgary
Interviews	389	15
Telephone calls	1,134	124
Home visits	9	14
Conferences	858	16
Observations	17	4
Agency Meetings	26	1
Parent Meetings	6	1
Records	1,256	182

Schooling

	Number of Pupils		Total School Days	
	Edmonton*	Calgary**	Edmonton	Calgary
Portable Classroom	17	....	1,778	....
Schoolroom I	8	12	1,265	2,024
Schoolroom II	11	12	1,034	2,238
Schoolroom III				
(Calgary—4 mos.)	7	10	1,243	613
Schoolroom IV	7	....	1,033	....

*Teaching program provided by the Edmonton Public School Board. All children receive full day of schooling with the exception of therapy periods.

Academic education provided by the Calgary School Board—all children receiving **half day of schooling per day with therapy included in this half day.

Dispensation of Cases

	Edmonton	Calgary
Admitted to regular school	2	6
Served by Public Schools Homebound Teachers	2	....
Served by Correspondence Branch	1	....
Admitted to Winnifred Stewart School for Retarded Children..	1	....
Admitted to special classes at age 9 in Calgary		
School Board System .....	....	4
Admitted to Provincial Training School at Red Deer	3	3
Referred to Edmonton Rehabilitation Centre	3	....
Attending Cerebral Palsy Association's Centres	18	13
Deceased	1	1

Foster Home Program

Total number of boarding cases	22	16
Total days—domiciliary allowance	3,509	2,971

Braces

Long leg braces with knee lock, hip joints, pelvic band	1 pair	2 pair
Long leg braces with corset top, free knee and ankle joint	1 pair	....
Long leg braces with no knee joints .....	....	4
Below knee irons and Magnusson splints, day and night	28	34
Gutter type night splints	2	2
Ponsetti bars—Fillauer	1	1
Shoe corrections	44	35
Brace adjustments and repairs	26	52
Typewriter guides	2	....
Special equipment and adjustments	7

Movie Film Progress Records

Total number of cases filmed in 1964	70	32
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Staff Education

Social Worker attended Visiting Teachers' Meetings	7
Social Worker and Teachers attended Special Teachers' In-service Meetings	12
Teachers attended Special Teachers' Meetings .....	....	6
Teachers attended meetings at Belgravia School	10	....
Teachers attended Conference	2 days	2 days
Teachers attended Institute	1	....
Therapists and Teacher visited Provincial Guidance Clinic	1	....
Occupational Therapist attended Study Course and General Annual Meeting of the Canadian Assoc. of Occupational Therapists for one week, Winnipeg	1	1
Physiotherapist attended Study Course and Congress of Canadian Physiotherapy Association, Winnipeg .....	....	1
Teacher and Social Worker visited Hearing Conservation Class	1	....
Physiotherapist visited Edmonton Cerebral Palsy Clinic .....	....	1
Occupational Therapist visited Edmonton Cerebral Palsy Clinic .....	....	1
Field trips to related agencies and institutions .....	....	3
Lectures attended by staff	9	....
Staff attended meetings held by:—		
—The Guidance Council of the Alberta Teachers' Assoc. and The Canadian Mental Health Assoc.	1	....

—The Edmonton Welfare Council and The Canadian Mental Health Assoc.	2	....
—The National Council of Jewish Women and The Canadian Mental Health Assoc.	2	....
—Exceptional Children's Meetings	6	....
Film Appraisals	2	3

Instructions, Conferences, Tours and Films Shown To:

Physiotherapy Students (30 hours training)	15	....
Physiotherapists, Occupational Therapists and Speech Therapists	18	16
Nurses—Public Health, Graduates, Students or Nursing Aides	138	96
Doctors, Medical Students	46	2
Educational Officials. Special Teachers and Teachers	15	8
Social Workers, Psychologists, Psychiatrists	17	5
University Students—Education and Physical Education	3	5
Miscellaneous Visitors, Service Groups, etc.	20	22
Various films shown	14 times	31 times

Conferences Held By:

Director and Ministers of Health, Education, with Representatives of Cerebral Palsy Association, School Board and Cerebral Palsy Clinic .....	....	1
Director and Guidance Clinic Director .....	....	1
Director	1	....
Director and Clinic Staff, Medical Consultants .....	....	3
Supervisors	4	2
Social Worker	1	....
Physiotherapist—Inter-clinic .....	....	1
Occupational Therapist—Inter-clinic .....	....	1

Lectures By Staff:

Directors	2	1
Supervisors	1	1
Speech Therapists	1	1
Occupational Therapists	1	2
Physiotherapists	1	....
Social Worker	2	....

Parent and Public Education

Medical Director attended and spoke at Calgary Cerebral Palsy Assoc. Meetings—General and Executive .....	....	4
Medical Director spoke at Meeting of the Edmonton Cerebral Palsy Assoc.	1	....
Social Worker spoke at meeting of the Edmonton Cerebral Palsy Assoc.	1	....
Occupational Therapist showed film on Home Economics for the Handicapped at meeting of the Edmonton Cerebral Palsy Assoc.	1	....
Social Worker took part in panel discussion at meeting of the Council for Exceptional Children	1	....
Occupational Therapist lectured at High School Career Night Program .....	....	1
Occupational Therapist lectured to large St. John Ambulance Company (Girls) .....	....	1
Speech Therapist spoke to Graduate Nurse Staff at Alberta Children's Hospital .....	....	1
Teacher spoke at Wood's Christian Home's Staff Meeting ...	....	1

Fire Drills

Practice sessions	1	2
Inspected drills	1	1

Lunches

.....	6,650	....
Total Volunteer periods	582	56
(Calgary—assisting with school program)		

Transportation

Transportation provided by the Edmonton and Calgary Cerebral Palsy Associations.

Acknowledgements

Appreciation is expressed to the staffs of the Cerebral Palsy Clinics and the Glenrose Hospital for their work during the past year. The help and co-operation of those administratively responsible at all levels has done much to preserve the quality of service.

DIVISION OF TUBERCULOSIS CONTROL

H. H. Stephens, M.D., Director

The slow gradual decline of new cases of tuberculosis in Alberta has been a continuous one since 1959. These numbered 763 in 1964 compared with 854 in 1963. Active cases accounted for 317, which is 26 fewer than the 343 discovered in 1963, for a decrease of 7.6%.

There were 872 patients treated in the two Provincial Sanatoria in 1964 compared with 934 in 1963, which represents a 6.6% decrease during the past year. The average length of stay in both institutions was 189 days, 13 days less than in 1963.

The present rate of decline indicates some progress, but it is my opinion this is too slow, and that there exists a degree of complacency that tuberculosis is no longer a contagious disease of major importance. Case finding procedures, to detect this disease at an early stage, need to be broadened in their use. The routine use of tuberculin testing and chest x-rays of all reactors at yearly or other regular intervals would hasten the control of this disease.

There are several small communities in the northern part of the province where socio-economic conditions are below average, and it is known that in these areas tuberculosis is more prevalent. Facilities to service these areas are limited and it becomes a big undertaking to move staff and equipment to these areas for the bi-annual surveys presently being carried out. When tuberculosis is discovered in these communities the education needed to gain co-operation for entry to sanatorium for those needing treatment is often difficult to carry out. Improvement in travel facilities to get portable screening equipment to these areas, and means to follow up patients at regular intervals, would be of invaluable assistance in reducing the higher incidence of tuberculosis among these residents.

Our two major cities, whose combined population makes up almost half that of the Province, have not had the advantage of screening programs for tuberculosis equal to rural areas. City health departments and their nursing staffs are doing excellent work by tuberculin testing school children, school personnel, food handlers and contacts of known cases. However, the over school age population has had limited screening by mobile miniature chest x-ray and tuberculin testing, except for industrial surveys usually carried out during the winter months. Survey equipment has not kept pace with the rapid growth of our cities and their expanding population. Constant search by tuberculin testing and chest x-rays at regular intervals to detect and remove active infectious cases of tuberculosis from among healthy people, especially in areas with the density of city populations, is our only hope of achieving control and eventual eradication of this disease.

CONSTRUCTION

No new construction has been undertaken during the year. Some renovations at the Baker Memorial Sanatorium have been done, and more are contemplated, which will result in consolidation of patients being treated for tuberculosis and vacating two buildings which may be converted to other use.

DIAGNOSTIC AND FOLLOW-UP SERVICES

There has been a marked increase noted in our out-patient work for the review of ex-sanatorium patients, known cases of tuberculosis, contacts and referred patients by practising physicians. The two major clinics at the Sanatoria, plus those clinics held at sixteen other centres throughout the Province, gave service to 24,670 persons. These examinations found 106 new active cases and 374 inactive cases of pulmonary tuberculosis, while 9 active and 5 inactive non-pulmonary cases were found.

Health Unit personnel and staff of city health departments have carried out 62,422 tuberculin tests in school surveys, finding 27 new cases of tuberculosis, 7 requiring treatment in Sanatorium, and in addition they do a great deal of work in our follow-up program.

The mobile chest x-ray units which are operated jointly by the Alberta Tuberculosis Association and this Division screened about 68,000 persons in 1964, detecting 169 new cases, which accounts for 22% of the 763 total for the year. Of these 24 cases were definitely active and about 1,000 others were put on a period of observation to rule out tuberculosis, and most of these will be referred to family physicians concerning non-tuberculous chest abnormalities. Tuberculin testing in conjunction with x-ray surveys have proven of very definite value. Tests were given to 70,779 persons; of these 1,748 failed to report the test while 17,237 were reported showing a reaction. This was in the over school age adult group in which a rate of one reactor in four tested, or 25% of these individuals, have been infected by tubercle bacilli. Fortunately only 3 to 5% of all reactors may develop clinical disease but regular x-rays every one to three years can detect early disease before a patient has symptoms, hence the importance of this procedure.

The hospital admission 4x5 x-ray program, in about 38 hospitals and sponsored by the Alberta Tuberculosis Association, is difficult to assess. About 35,000 x-rays were taken and approximately two-thirds of these are read by hospital radiologists, while one-third are sent to the Sanatoria for interpretation, and 24 new cases of tuberculosis were found by this method, but not all of these were active.

The Provincial Laboratories, the Cancer Clinic, the Department of Veterans' Affairs, the Mental Hospitals and routine x-rays taken in all the Correctional Institutions, the Health Units, the City Health Departments, the Department of National Health and Welfare, Medical Services, have all contributed to the diagnostic and follow-up service in this Division, and their kind assistance is gratefully acknowledged. It will be noted in the detailed report that clinics and surveys gave service to 265,914 Albertans.

The family doctor remains the mainstay in detection and referral of new cases. In 1964 there were 213 referred by physicians or about 28% of the total of 763; of these 146 were active, representing 46% of all the active cases. The co-operation of practising physicians is excellent and it is hoped routine tuberculin testing in general practice may be used more extensively.

B.C.G. vaccination, as in previous years, has been offered only to those where probable exposure to tuberculosis is above average, such as hospital staffs, medical and nursing students; and to non-reactors in families where a case of far advanced or moderately

advanced pulmonary tuberculosis has been doubtfully controlled. B.C.G. is also recommended to persons who plan to visit other countries where tuberculosis may be more prevalent. There were 3,050 persons vaccinated in 1964 and of these 1,905 were carried out by the Department of National Health and Welfare, Medical Services.

TREATMENT SERVICES

There were 872 patients treated in the two Sanatoria in 1964 as compared to 934 in 1963. The average stay was 189 days compared with 202 days last year.

The overall treatment period still requires eighteen to twenty-four months, and a combination of drug therapy with some restriction of activity follows the pattern of the past several years. Surgical intervention has shown a marked decline, especially during the past five years.

EDUCATION AND REHABILITATION

Qualified teachers carry on school programs—grades 1 to 9; and higher grades have assistance by a teacher provided by the Alberta Tuberculosis Association, in supervising Correspondence School Courses, special Commercial Courses and Basic English.

The Rehabilitation Department is also provided through the courtesy of the Alberta Tuberculosis Association and has proven most valuable to many of our patients. The Occupational Therapy Department augments both treatment and educational programs.

NURSING AND MEDICAL PROGRAM

The final year Medical Students attend a teaching session two hours each week at the Aberhart Memorial Sanatorium, throughout the academic year.

Both Sanatoria have affiliate nursing programs of four weeks, with most of the Training Schools for nurses. Some have expressed the view that the course is too long, and for several years the Aberhart Memorial Sanatorium has provided a concentrated five-day course for students not able to affiliate for four weeks. This has proven of definite value; and the Baker Memorial Sanatorium expects to begin a similar course during the coming year.

ACKNOWLEDGEMENTS

My grateful appreciation is extended to the Minister, the Honorable Dr. J. Donovan Ross, and to the Deputy Minister, Dr. M. G. McCallum, for their understanding and assistance in the work of this Division.

The Alberta Tuberculosis Association has again, under the direction of Mr. J. McKenzie, rendered valuable assistance in many phases of work in our control program. This applies especially to case finding, public education, rehabilitation, assistance to Health Units and City Health Departments concerning tuberculosis, and in medical and nursing educational programs. To all the Staff and Directors I wish to extend my gratitude for their co-operation and assistance.

The clergy who have provided services regularly at the sanatoria and attended to the spiritual needs of our patients have helped us in the management and care provided, and I acknowledge their attention and assistance.

To the many groups of volunteer workers, as well as individuals who have given of their time and efforts toward the well being of our patients in hospital, I wish to express my sincere appreciation for their kindness and thoughtfulness on so many occasions during the year. There are, as well, individuals and groups scattered throughout the Province who have contributed much during periodic surveys in their communities. Donations have been made to our patients' canteen fund which provides comforts for many needy patients, and I wish to express my appreciation for this generous assistance.

The Staff of the Division, including the Central Registry, has again carried out a successful year in spite of marked increase in the follow-up procedures. The Sanatoria Staff, both in Edmonton and Calgary, as well have experienced much heavier demands in out-patient service and follow-up work, with only slight change in hospital responsibilities, and I wish to express my appreciation to Dr. Ryder and his Staff, and to all departments at the Aberhart Memorial Sanatorium who have assisted in making the past year a successful one.

A statistical summary follows, outlining the work carried out by the Sanatoria and the Division.

DIAGNOSTIC CLINIC

1. STATIONARY CLINICS	No. Sessions	New Cases of Tub.				No. of Examinations
		Pul. Act.	Pul. Inact.	Non-pul. Act.	Non-pul. Inact.	
Baker Memorial Sanatorium	98	21	63	2	1	3,411
Aberhart Memorial Sanatorium ..	149	37	87	6	3	8,508
Athabasca	2	....	....	....	....	55
Bonnyville	2	....	....	....	....	30
Brooks	12	....	....	....	....	104
Camrose	2	....	....	....	....	40
Drumheller	12	....	....	....	....	245
Grande Prairie	2	....	....	....	....	43
Hanna	1	....	....	....	....	10
High Prairie	2	....	....	....	....	32
Lac La Biche	2	....	....	....	....	48
Lethbridge	10	5	18	....	1	834
Medicine Hat	10	....	3	....	....	587
Peace River	2	....	....	....	....	41
Red Deer	12	....	....	....	....	329
St. Paul	2	....	....	....	....	27
Taber	12	....	....	....	....	134
Vegreville	2	....	....	....	....	35
TOTAL	334	63	171	8	5	14,513
*Miscellaneous Clinics .....	....	43	203	1	....	10,157
TOTAL ALL CLINICS	334	106	374	9	5	24,670

*Films sent in from various points and paid for by the Tuberculosis Division.

2. TUBERCULIN TESTING AND X-RAY PROGRAM

(Conducted by Public Health Personnel, Teachers, Business Firms, Hospitals, etc.)

	No. Tbn. Tested	No. X-rayed
Industrial Survey (Industrial Health Services) ..	700	745
Miscellaneous	8,166	672
School Board, Edmonton	78	173
Nursing Aide Trainees	335	850 (470 x-rayed by City Hall Unit)
Food Handlers	24	246
Red Cross Blood Transfusion Service	3	3
University Students	2,847	245
Provincial Laboratory Staff	11	12
School Survey (see Table 2b)	70,095	2,479 (696 x-rayed by City Hall Unit)
TOTAL	82,259	5,425 (1166 x-rayed by City Hall Unit)

Actual number given service through this program is 81,971, i.e. the number tuberculin tested plus the number x-rayed but not tested and minus the number known to be x-rayed by Mass X-ray Survey program.

2a. NUMBER OF INJECTIONS, OUT-PATIENTS

	Baker Memorial Sanatorium	Aberhart Memorial Sanatorium	Total
Streptomycin	166	1,820	1,986

2b. SCHOOL TUBERCULIN TESTING SURVEY

	No. Tested			No. Reactors			Total Reactors	Number X-rayed	New Cases Tub.	
	School	Staff	Contacts	School	Staff	Contacts			Active	Inactive
Alberta East Central H.U.	1,659	...	...	18	...	...	18	45	...	...
Athabasca H.U.** .....	...	...	...	...	...	...	...	...	...	...
Banff National Park H.U.	214	13	...	9	2	...	11	8	...	...
Barons Eureka H.U.	1,425	455	37	11	18	10	39	28	...	...
Big Country H.U.	827	278	22	9	32	1	42	44	...	...
City of Calgary	10,742	...	740	279	...	153	432	579	2	...
Chinook H.U.	1,884	9	...	24	4	...	28	28	...	...
Drumheller	(see note)			...	...	...	...	...	...	...
City of Edmonton	11,070	1,309	661	380	212	177	769	648	3	1
Edson H.U.	2,323	71	151	32	11	10	53	52	...	2
Foothills H.U.	752	36	17	5	9	2	16	16	...	...
Grande Prairie H.U.	6,433	458	260	124	49	12	185	185	1	3
Jasper National Park H.U.* .....	...	...	...	...	...	...	...	...	...	...
Leduc-Strathcona H.U.	3,218	473	538	98	40	109	247	293	...	4
City of Lethbridge	1,797	211	245	43	21	53	117	117	...	3
Medicine Hat H.U.* .....	...	...	...	...	...	...	...	...	...	...
Minburn-Vermilion H.U.* .....	...	...	...	...	...	...	...	...	...	2
Mount View H.U.	3,152	44	55	48	9	9	66	66	...	...
North Eastern Alberta H.U.	†335	...	52	10	3	11	24	?	...	2
Peace River H.U.	2,692	201	248	105	38	34	177	141	1	1
Red Deer H.U.	2,807	173	24	15	9	7	31	31	...	1
Stony Plain-Lac Ste. Anne H.U.	501	2	11	32	...	...	32	19	...	...
Sturgeon H.U.	4,190	190	165	87	35	36	158	107	...	...
Vegreville H.U.	1,906	104	35	1	10	13	24	24	...	...
Wetoka H.U.	3,044	255	109	30	11	10	51	43	...	1
Warner Municipal Nurse	1,151	3	18	3	...	1	4	5	...	...
TOTAL	62,422	4,285	3,388	1,363	513	648	2,524	2,479	7	20

†Staff and Students.

*No Report received.

**Report received too late to be included.

The Report from this Health Unit did not show the required detail but it is estimated that 3,782 persons were tested under this program and all reactors were x-rayed.

3. MASS X-RAY SURVEYS

	Number X-rayed	Number Tbn. Tested	Not Reported	Number Reactors
Surveys at 150 points in 9 Health Units and 1 Municipal Nursing District	67,389	56,544	1,558	16,052
City Hall Calgary: Industrial	1,286	...	...	...
Nursing Aide Trainees	470	...	...	...
School Survey	696	...	...	...
General Public	7,614	...	...	...
City Hall, Edmonton: General Public	6,638	...	...	...
City Hall, Lethbridge: General Public	833	...	...	...
Health Unit Office, Red Reer: General Public	238	...	...	...
Industrial Survey, Calgary	17,080	1,658	190	733
Industrial Survey, Edmonton	13,400	12,577	...	452
Correctional Institutions: Calgary	2,008	...	...	...
Fort Saskatchewan	4,186	...	...	...
Lethbridge	550	...	...	...
Unemployment Insurance Commission, Edmonton	3,130	...	...	...
X-ray Unit #6, South	393	...	...	...
X-ray Unit #6, North	651	...	...	...
Northern Alberta Institute of Technology, Edmonton	292	...	...	...
GRAND TOTAL	126,854	70,779	*1,748	17,237

DEPARTMENT OF PUBLIC HEALTH

SUMMARY MASS X-RAY SURVEYS

Number x-rayed	126,854	
Probable Tuberculosis Active	49	(1 previously discovered)
Probable Tuberculosis Inactive	1,254	(1,044 previously discovered)
Pleurisy Active	2	(2 previously discovered)
Pleurisy Inactive	615	(243 previously discovered)
Further Examination Requested	1,332	
Non-Tuberculosis Chest Conditions	1,589	(24 of these probable Carcinoma)
Undiagnosed	401	(includes 386 spoiled films)
No Disease	121,612	

*Where no figure is given or where figure is obviously less than it should normally be, complete returns were not available.

4. SUMMARY CLINICS AND SURVEYS

Stationary Clinics	14,513
Other Clinics	10,157
Surveys (Miscellaneous, Table 2)	11,876
Mass Surveys	126,854
School Surveys	70,095
Department of National Health and Welfare (Indian and Northern Health Services)	19,606
*Hospital Admission Program	12,813
TOTAL	265,914

*The Hospital Admission X-ray Program, sponsored by the Alberta Tuberculosis Association in various hospitals throughout the Province reports chest films taken as follows:

14 x 17 films	35,718
Miniature films	21,784
TOTAL	57,502

Of the above, only those referred to the Sanatorium for interpretation are included in Table 4.

5. SOURCES OF DISCOVERY OF NEW CASES OF TUBERCULOSIS

	1963	%	1964	%	% (Active)
Clinics	583	68.3	495(115)	64.9	36.3
Referred for admission by family doctor	142	16.6	144(133)	18.9	42.0
#6 X-ray Unit	5	.6	3(...)	.4	...
Referred by Department of Veterans' Affairs or National Defence	11	1.3	5(4)	.6	1.3
Provincial and Hospital Laboratories	3	.4	6(5)	.8	1.6
Hospital Admission Program	19	2.2	16(1)	2.1	.3
Department National Health and Welfare (Indian Health Services)	63	7.4	57(48)	7.5	15.1
Department National Health and Welfare (Immigrants)	1	.1	....( ...)	...	...
Mental Hospital	17	1.9	19(3)	2.5	.9
Industrial Survey (In co-operation with Industrial Health Services) .....	...	...	5(...)	.6	...
Miscellaneous	10	1.2	13(8)	1.7	2.5
TOTAL	854		763(317)		

The following table sets forth the sources of discovery giving credit to programs actually referring the cases to the Tuberculosis Clinics or for admission to Sanatorium beds for the establishment of diagnoses, e.g. the various programs originally responsible for the 495 cases being referred to Tuberculosis Clinics are credited with the discovery of the cases in the following break-down.

	1963	%	1964	%	% (Active)
Family Doctor	212(149)	24.8	213(146)	27.9	46.1
Mass Surveys	198(26)	23.2	169(24)	22.1	7.6
#6 X-ray Unit	5(3)	.6	3(...)	.4	...
Contacts	73(51)	8.5	65(44)	8.5	13.9
Department National Health and Welfare (Indian Health Services)	74(59)	8.7	58(48)	7.6	15.1
Department National Health and Welfare (Immigrants)	52(1)	6.1	62(4)	8.1	1.3
Previously diagnosed other Provinces or Countries	80(4)	9.4	54(9)	7.1	2.8
Hospital Admission Program	42(4)	4.9	24(2)	3.1	.7
School Surveys	21(10)	2.5	27(7)	3.5	2.2
City Hall X-ray Units	24(5)	2.8	19(7)	2.5	2.2
Department Veterans' Affairs and National Defence	9(2)	1.0	4(3)	.5	.9
Food Handlers	8(1)	.9	3(...)	.4	...
Correctional Institutions	16(7)	1.9	9(3)	1.2	.9

Provincial and Hospital Laboratories	6(6)	.7	6(6)	.8	1.9
Miscellaneous Surveys	1(1)	.1	2(1)	.3	.3
Mental Hospital	18(8)	2.2	19(2)	2.5	.7
Cancer Clinic	2(2)	.2	....( ....)	....	....
Workmen's Compensation Board .....	....( ....)	....	1(1)	.1	.3
Pre-employment X-Ray	1(1)	.1	1(1)	.1	.3
Industrial Survey (In co-operation with Industrial Health Services) .....	....( ....)	....	7(....)	.9	....
Miscellaneous Sources	12(3)	1.4	17(9)	2.4	2.8
TOTAL	854(343)		763(317)		

Figures in brackets indicate number of active cases.

6. CLASSIFICATION OF NEW CASES OF ACTIVE AND INACTIVE TUBERCULOSIS

	Active	Inactive	Total
Minimal	50	377	427
Moderately advanced	82	50	132
Far advanced	33	3	36
Primary	70	....	70
Tuberculosis pleurisy with effusion or evidence of previous pleurisy..	9	9	18
Non-pulmonary tuberculosis	69	6	75
Miliary	4	1	5
TOTAL	317	446	763

Number of cases reactivated (includes 7 Treaty and 18 Metis)	54	
Number of non-residents diagnosed tuberculosis (includes 38 immigrants)	40	(includes 3 actives)
Number Treaty Indians diagnosed tuberculosis	50	(45 active)
Number of Metis diagnosed tuberculosis	84	(68 active)
Number of known contacts of newly discovered active and reactivated cases	3,367	
Number of these contacts known to be checked during 1964	2,203	65.4%

OLD TUBERCULIN DISTRIBUTED DURING 1964

	BMS	AMS	Total
Dilution No. 2	64	164	228
Dilution No. 3	301	723	1,024
Dilution No. 4	50	1	51
Purified Protein Derivative	355	1,542	1,897
TOTAL	770	2,430	3,200

In addition to the above, Patch Tests were sent upon request to Physicians and Hospitals. The Tuberculosis Division recommends, however, that the Mantoux or Heaf Test be used in preference to the Patch Test.

B.C.G. VACCINATIONS 1964

1. Nurses (a) Graduates	2
(b) Students	481
(c) Other Nursing Personnel	437
2. Other Hospital Personnel	70
3. Medical Students	57
4. Indians and Eskimos—(newborn), (adults and children). (Indian and Northern Health Services)	1,905
5. All Other Persons—	
(a) Newborn contacts	3
(b) Adults and children, contacts	28
(c) Newborn, not contacts .....	....
(d) Adults and children, not contacts	67
TOTAL	3,050

INSTITUTIONAL REPORT

	Baker Memorial Sanatorium	Aberhart Memorial Sanatorium
Number of patients under treatment January 1, 1964	92	200
Number admitted during 1964	205	375
Number transferred in during 1964 .....	....	....
Number treated during 1964	297	575
Number discharged or died during 1964	220	376
Number transferred out during 1964 .....	....	....
Number discharged, died or transferred out during 1964	220	376
Number under treatment December 31, 1964	77	199
Number of patients under treatment January 1, 1964		292
Number of admissions during 1964		580
Number of patients treated in Alberta during 1964		872

DEPARTMENT OF PUBLIC HEALTH

DIAGNOSIS OF PATIENT ADMISSIONS

	Baker Memorial Sanatorium	Aberhart Memorial Sanatorium
PULMONARY TUBERCULOSIS ACTIVE		
Minimal	22	44
Moderately advanced	47	100
Far advanced	27	34
Miliary	1	2
Primary	10	44
Pleural effusion .....	...	9
NON-PULMONARY TUBERCULOSIS		
Abscess .....	...	4
Adenitis	9	15
Bone	5	12
Erythema Nodosum .....	...	1
Genito-urinary	8	18
Kerato-conjunctivitis .....	...	1
Lupus Vulgaris .....	...	3
Meningitis	1	2
Pelvic	3	3
NOT NECESSARILY NON-PULMONARY		
Tuberculosis inactive	14	29
For diagnosis	56	20
Non-tuberculous	2	34
TOTAL	205	375
Number with positive sputum on admission	39	120
Number with negative sputum on admission	166	255
Number of readmissions during 1964	40	110
Number both admitted and readmitted during 1964	5	49
Number left against advice during 1964	14	71
Number of patient days	34,070	74,649
Number of patient days in other provinces under reciprocal agreement .....	...	1,225
Total number of patient days including those in other provinces under reciprocal agreement .....	...	109,944
Number of patients in other provinces (reciprocal agreement) January 1, 1964 .....	...	1
Number of admissions in other provinces under reciprocal agreement .....	...	7
Number of institutional patient days provided for non-residents in Alberta under reciprocal agreement .....	...	1,120
Number of patients in Alberta Sanatoria, non-residents under reciprocal agreement January 1, 1964 .....	...	3
Number of admissions, non-residents, under reciprocal agreement .....	...	7
Number of active tuberculosis cases admitted for treatment who have a history of tuberculosis, but who are not known to have been admitted for treatment anywhere previously ....	...	44
Number of "chronic alcoholics" admitted .....	...	23
Number found to have carcinoma either on admission or by x-ray (Clinic, Hospital Admission, Mass Survey, etc.) .....	...	65

OPERATING ROOM REPORT

	Baker Memorial Sanatorium	Aberhart Memorial Sanatorium	Total
Aspiration of chest	30	49	79
Bronchoscopy	38	26	64
Bronchogram	42	15	57
Lobectomy	6	7	13
Plombage	1	...	1
Pneumonectomy .....	...	2	2
Thoracoplasty	3	3	6
Thoracotomy—diagnostic	1	1	2
Thoracotomy and decortication	1	...	1
Segmental resection .....	...	3	3
Removal plombage .....	...	1	1
Tracheotomy .....	...	2	2
Cystoscopy	18	18	36
Nephrectomy	2	4	6
Suprapubic cystotomy .....	...	1	1
Pyelogram through ureterostomy .....	...	1	1
Orthopaedic operations	7	6	13
Casts	6	12	18
Cholecystectomy .....	...	1	1
Decompression of bowel and repair of hernia .....	...	1	1
Drainage appendiceal abscess .....	...	1	1
Gastrostomy	1	2	3
Hysterectomy	1	...	1
Implantation D.O.C.A.	4	13	17
Miscellaneous procedures	332	20	352
TOTAL	493	189	682

SUMMARY PNEUMOTHORAX CASES

	Baker Memorial Sanatorium	Aberhart Memorial Sanatorium	Total
Under treatment January 1, 1964	1	....	1
Under treatment December 31, 1964	1	....	1
Refills:			
Resident .....	....	....	....
Out-patient	11	....	11
TOTAL REFILLS	11	....	11

There were no cases discontinued or transferred.

SUMMARY PNEUMOPERITONEUM CASES

Under treatment January 1, 1964 .....	....	4	4
Number discontinued during 1964 .....	....	3	3
Number under treatment December 31, 1964 .....	....	1	1
Refills:			
Resident .....	....	23	23
Out-patient .....	....	94	94
TOTAL REFILLS .....	....	117	117

NUMBER DISCHARGED ON DRUGS DURING 1964

	Baker Memorial Sanatorium	Aberhart Memorial Sanatorium	Total
Isoniazid	1	2	3
Isoniazid and Para-amino Salicylic Acid	40	141	181
Isoniazid and Isoxyl	3	....	3
Isoniazid and Streptomycin	3	24	27
Isoniazid, Para-amino Salicylic Acid and Streptomycin	2	38	40
Isoniazid and Cycloserine	1	....	1
Streptomycin and Para-amino Salicylic Acid	1	2	3
Isoxyl and Seromycin	1	....	1
Isoniazid, Para-amino Salicylic Acid and Pyrazinamide .....	....	1	1
Isoniazid, Para-amino Salicylic Acid, Streptomycin and Pyrazinamide .....	....	1	1
Isoniazid, Para-amino Salicylic Acid and Cycloserine .....	....	1	1
Para-amino Salicylic Acid, Pyrazinamide and Streptomycin .....	....	1	1
Pyrazinamide and Viomycin .....	....	1	1
Streptomycin and Isoxyl .....	....	1	1
Streptomycin, Para-amino Salicylic Acid and Cycloserine .....	....	1	1
Isoniazid and Pyrazinamide .....	....	1	1
Streptomycin, Isoniazid, Para-amino Salicylic Acid, Pyrazinamide and Ethionamide .....	....	1	1
TOTAL	52	216	268

LABORATORY REPORT

	Baker Memorial Sanatorium	Aberhart Memorial Sanatorium	Total
SPUTUM EXAMINATIONS			
Positive	179	377	556
Negative	2,260	1,919	4,179
TOTAL	2,439	2,296	4,735
URINE EXAMINATIONS	3,873	5,753	9,626
BLOOD EXAMINATIONS			
Blood Counts	3,459	4,505	7,964
Sedimentation Rates	2,141	2,946	5,087
Blood Sugars	458	636	1,094
TOTAL	6,058	8,087	14,145
MISCELLANEOUS			
Pleural Fluid	17	18	35
Spinal Fluid	5	19	24
Gastric Analysis	6	3	9
Culture	5,778	1,665	7,443
Guinea Pig Inoculation	584	828	1,412
Other	2,910	1,702	4,612
TOTAL	9,300	4,235	13,535

WASSERMAN REPORT

Positive	2	13	15
Negative	201	295	496
TOTAL	203	308	511
Basal Metabolism Rate .....	....	15	15
Cardiograph .....	....	103	103

DENTAL REPORT

	Baker Memorial Sanatorium	Aberhart Memorial Sanatorium	Total
Number of patients (individuals)	288	442	730
Number of treatments	75	470	545
Number of prophylactic treatments	48	8	56
Number of fillings	49	237	286
Number of extractions	77	189	266
Number of new dentures and repairs .....	....	36	36
TOTAL	537	1,382	1,919

X-RAY DEPARTMENT REPORT

	Baker Memorial Sanatorium		Aberhart Memorial Sanatorium		Total	Total	Grand Total
	In-Pts.	Out-Pts.	In-Pts.	Out-Pts.	In-Pts.	Out-Pts.	
RADIOGRAPHS MADE							
Chest—Full Size	1,082	1,527	1,663	2,532	2,745	4,059	6,804
Miniature .....	....	2,663	....	7,511	....	10,174	10,174
Ribs	1	....	9	2	10	2	12
Pelvis	23	12	14	7	37	19	56
Extremities	103	68	74	24	177	92	269
Spines—Cervical	13	11	5	1	18	12	30
Dorsal	29	22	15	5	44	27	71
Lumbar	46	30	33	13	79	43	122
Skull	10	....	8	....	18	....	18
Sinuses	7	....	1	1	8	1	9
F.P. Abdomen	14	1	16	1	30	2	32
G.B. Series	1	....	8	....	9	....	9
G.I. Series	9	2	10	....	19	2	21
Barium Enema	1	....	1	....	2	....	2
Intravenous Pyelogram	28	....	34	23	62	23	85
Retrograde Pyelogram	10	....	9	1	19	1	20
Sinogram	4	....	10	1	14	1	15
Bronchogram	44	....	37	3	81	3	84
Ordographs (body section radiography)	54	7	116	25	170	32	202
Dental	37	....	113	....	150	....	150
Sacro-iliac	3	2	....	....	3	2	5
Shoulders	4	6	....	....	4	6	10
Mandible .....	....	....	1	....	1	....	1
TOTAL	1,523	4,351	2,177	10,150	3,700	14,501	18,201
Fluoroscopic							
Examinations .....	....	1	16	70	16	71	87
Films sent in for Interpretation	13,867	....	10,095	....	....	....	23,962
Basal Metabolism Rate ..	1	....	....	....	....	....	1
Cardiograph	59	....	....	....	....	....	59
Audiogram	2	....	....	....	....	....	2

CLASSIFICATION OF DISCHARGED PATIENTS

	Residence			On discharge				
	On ad- mission	31 days or less	Over 31 days	In.	Q.	Al.	Au.	D.
1. For diagnosis	101	68	33	....	....	....	....	4
2. Primary Tuberculosis.....	60	3	57	11	....	48	....	....
3. Reinfection type pulmonary tuberculosis clinical:								
Minimal	61	12	49	31	....	28	2	....
Moderately advanced....	73	11	62	39	1	28	2	2
Far advanced	17	5	12	11	3	1	....	2
4. Reinfection type pulmonary tuberculosis positive:								
Minimal	26	1	25	2	....	23	1	....
Moderately advanced ..	83	3	80	10	....	64	4	5
Far advanced	55	7	48	8	....	34	4	9
Miliary	3	1	2	2	....	....	....	1
5. Tuberculosis pleurisy	12	1	11	3	....	8	....	1
6. Non-pulmonary Tuberculosis:								
Adenitis	24	5	19	5	....	19	....	....
Addison's Disease.....	1	1	....	1	....	....	....	....
Abscess	4	2	2	....	....	3	1	....
Bone	19	....	19	9	....	10	....	....
Erythema Nodosum	1	....	1	....	....	1	....	....
Eye	1	....	1	....	....	1	....	....
Genito-urinary	33	8	25	11	....	22	....	....
Lupus Vulgaris	5	1	4	....	....	4	1	....
Meningitis	7	....	7	1	....	5	....	1
Pelvic	10	3	7	4	....	6	....	....
Total active tuberculosis	495	64	431	....	....	....	....	....
Total treated .....	....	....	464	115	4	293	3	14
Total untreated .....	....	132	....	33	....	12	12	11
Grand total	596	132	464	148	4	305	15	25

EXPLANATION OF ABBREVIATIONS AND TERMS USED

The standard classification is that of the National Tuberculosis Association. Minimal, Moderately Advanced, and Far Advanced refer to anatomical extent of disease.

In. Inactive
Q. Quiescent
Al. Active Improved
Au. Active Unimproved
D. Died

N.B.: Only those in residence over 31 days are classed as "treated".

2 cases were admitted as active tuberculosis but were found to be non-tuberculous, thus accounting for the apparent discrepancy in the above table.

CLASSIFICATION ON ADMISSION OF 596 DISCHARGED PATIENTS

	Baker Memorial Sanatorium	Aberhart Memorial Sanatorium	Total
For diagnosis	57	44	101
Primary tuberculosis	13	47	60
Pulmonary tuberculosis	115	203	318
Tuberculous pleurisy	3	9	12
Non-pulmonary tuberculosis	32	73	105
TOTAL	220	376	596

CLASSIFICATION ON DISCHARGE OF TREATED CASES OF ACTIVE TUBERCULOSIS AND TUBERCULOUS PLEURISY

	On admission Number	On discharge		
		Improved	Unimproved	Died
Minimal	74	73	1	....
Moderately advanced	142	135	1	6
Far advanced	60	53	1	6
Primary	56	56	....	....
Miliary	2	2	....	....
Non-pulmonary tuberculosis	85	84	....	1
Tuberculous pleurisy	11	10	....	1
TOTAL	430	413	3	14

RESIDENCE OF DISCHARGED PATIENTS

SUMMARY	Baker Memorial Sanatorium	Aberhart Memorial Sanatorium	Total
Cities	129	151	280
Towns (not included in Health Units)	1	....	1
Health Units	73	172	245
Enlarged Municipal Districts { not included in }	13	....	13
Local Improvement Districts { Health Units }	....	22	22
Non-Resident	4	31	35
TOTAL	220	376	596

SEX OF DISCHARGED PATIENTS

Male	136	200	336
Female	84	176	260
TOTAL	220	376	596

AGE ON ADMISSION OF DISCHARGED PATIENTS

Under 1 year .....	....	2	2
From 1 - 9 years	26	50	76
From 10 - 14 years	3	17	20
From 15 - 19 years	6	23	29
From 20 - 29 years	30	56	86
From 30 - 39 years	24	70	94
From 40 - 49 years	27	49	76
From 50 - 59 years	44	42	86
From 60 - 69 years	28	39	67
From 70 - 79 years	25	23	48
80 years and over	7	5	12
TOTAL	220	376	596

SOCIAL STATUS OF DISCHARGED PATIENTS

Single	86	165	251
Married	100	165	265
Divorced	6	1	7
Separated	1	20	21
Widowed	27	25	52
TOTAL	220	376	596

RESIDENCE IN ALBERTA

Born in Alberta	85	208	293
1 year or less	10	15	25
1 - 5 years	19	8	27
6 - 9 years	17	20	37
10 - 14 years	21	21	42
15 - 19 years	9	13	22
20 - 29 years	8	11	19
30 or more years	51	56	107
Non-resident .....	....	24	24
TOTAL	220	376	596

RACIAL ORIGIN

Metis	10	161	171
Native Indian	33	....	33
Chinese	6	4	10
Japanese	4	....	4
Negro	1	....	1
East Indian	1	....	1
TOTAL	55	165	220

LENGTH OF STAY IN SANATORIUM OF DISCHARGED PATIENTS

	Baker Memorial Sanatorium	Aberhart Memorial Sanatorium	Total T.B. Division	Charles Camsell	Total
DEATHS					
Number in Sanatorium under 31 days..	6	5	11	....	11
Number of patient days.....	112	23	135	....	135
Average number of patient days	18.7	4.6	12.3	....	12.3
Number in Sanatorium 31 or more days	5	9	14	....	14
Number of patient days	6,654	2,878	9,532	....	9,532
Average number of patient days	1,330.8	319.8	680.9	....	680.9
DISCHARGES					
Number in Sanatorium under 31 days	64	57	121	29	150
Number of patient days	921	882	1,803	448	2,251
Average number of patient days	14.4	15.5	14.9	15.4	15.0
Number in Sanatorium 31 or more days	145	305	450	82	532
Number of patient days	29,262	71,806	101,068	21,869	122,937
Average number of patient days	201.8	235.4	224.6	266.7	231.1
Total number deaths and discharges ..	220	376	596	111	707
Total number patient days	36,949	75,589	112,538	22,317	134,855
Average number of patient days	167.95	201.04	188.8	201.1	190.7

N.B. The figures for the Charles Camsell Hospital refer to Alberta patients only.

DIVISION OF MENTAL HEALTH

**R. R. MacLean, M.D., Cert. in Neurol. and Psych.,
F.A.P.A., Cert. M.H.A. (A.P.A.), Director**

ADMINISTRATION

The Division of Mental Health of the Province concerns itself with matters of mental health, mental illness, and mental retardation. In the field of preventive and community services are the Provincial Guidance Clinics. Treatment and care of the mentally ill are provided by two active treatment reception hospitals, and three auxiliary mental hospitals, which provide long-term and geriatric care. There is also a small unit for emotionally disturbed children. For the care and training of mentally retarded children there is a Provincial Training School, and for the care of the adult retarded, chiefly, there is Deerhome, a separate institution. Separate annual reports of the above-mentioned services are included herewith.

The services provided have been very satisfactory and have been expanded during the past year in an attempt to meet the growing demand for all such.

Bursary assistance was granted to many staff members in the discipline of psychiatry, psychology and social work, in an effort to provide more trained and experienced staff in all the services. The shortage of such staff continues to be a major problem in endeavouring to meet the demands for increased services.

On the first of October, 1964, Dr. A. Ralph Schrag, who had been in the Department for many years and in different Branches of the Division of Mental Health, was appointed to the newly established position of Assistant Director.

PREVENTIVE SERVICES

The total work-load of the Clinics again showed a substantial increase. The cases examined were of a severe nature generally. The majority fell within the category of the emotionally disturbed and otherwise maladjusted children. About 28 per cent of all new cases seen were in the intellectually inadequate group.

The Grande Prairie Branch of the Provincial Guidance Clinic, Edmonton, which opened in 1963, had its staff increased by the addition of a Social Worker.

There continued to be a higher percentage of adults seen in the Lethbridge and Medicine Hat areas, due to the fact that no psychiatrists were in private practice, and the Guidance Clinic Psychiatrist attempted to fill this need.

The Clinic personnel engaged in a great deal of work in the field of public education in Mental Health. Staff members took part in panels, individual talks and radio and television appearances.

The Clinics assisted in the follow-up work with discharged patients from the mental hospitals. Psychiatrists from the Provincial Mental Hospital, Ponoka, visited the Provincial Guidance Clinic, Calgary, for the purpose of interviewing former patients and reviewing their progress and prescribing or adjusting medications. This service is worthy of special mention.

Separate reports from the various Clinics follow:

PROVINCIAL GUIDANCE CLINIC—EDMONTON**J. B. Van Stolk, M.B. Ch.B.****Specialist in Psychiatry, R.C.P.S.(C.), Clinic Psychiatrist**

During 1964 two staff members returned from educational leave, after successfully completing their academic year and obtaining their Bachelor Degrees in Social Work. One of these two joined the staff of the growing sub-clinic in Grande Prairie as a resident Psychiatric-Social Worker, while the other for personal reasons asked to give her return year of service in Calgary rather than in Edmonton; she subsequently joined the staff of the Calgary Guidance Clinic.

Four other staff members were given educational leave, three for further studies in Social Work, one for further study in Psychology, under the Federal Health Grant.

New Psychological and Social Work staff were appointed to fill positions which had become vacant.

The Psychiatric staff during the first half of 1964 was for the first time at full strength, consisting of three certified Psychiatrists and two Psychiatrists in training. From July to December, the Psychiatric staff was reduced in strength, one qualified psychiatrist left the Clinic service in July, while the most experienced psychiatrist was promoted to other duties and responsibilities on October 1st, leaving one certified psychiatrist and two trainees to cope with the work load.

The Sub-Office of the Clinic in Grande Prairie continued to expand its services. Regular contact with psychiatric supervision was maintained on a nearly three days a month basis.

Clinic trips continued on a scale similar to last year. An additional trip to Fort McMurray was made this spring. Demands for more Clinic trips have come from several areas, particularly from the Edson-Evansburg-Mayerthorpe area, and Whitehorse, Yukon Territory.

Total cases seen in 1964 were 2,630, which is an increase of 259 cases over 1963. The total work load was 22,210 periods, which again represents an increase in the neighborhood of 2,000 periods.

Age and Sex Distribution: The sex ratio was 1.93 males to 1 female.

Age Distribution	Percentage
0 - 5-11	16.97%
6 - 17-11	78.28%
18 and over	4.75%

BREAKDOWN OF CASES SEEN IN EDMONTON AND RURAL AREAS:

CLINIC AREA	New Cases	Re-Registered Cases	Increase or Decrease
Athabasca	24	6	+ 1
Barrhead, Westlock, Thorhild	44	10	+ 6
Bonnyville	34	13	+ 18
Camrose-Killam	53	7	+ 23
Edmonton	946	447	+ 18
Edmonton Rural	162	...	— 39
Edson	39	10	+ 15
Fort McMurray	11	2	— 6
Holden	21	2	+ 8
Lac La Biche	22	10	+ 6
Lamont	21	3	— 6
Peace River-Grande Prairie	330	122	+ 168
Smoky Lake	11	4	+ 8
St. Paul	28	9	+ 7
Two Hills	12	2	— 1
Vegreville	45	14	+ 14
Vermilion	38	15	+ 14
Wainwright	31	14	+ 6
Wetaskiwin	38	30	— 1
TOTALS	1,910	720	+ 259

Work Load for 1964 was 22,210, an increase of 2,024.

This year, for the first time, the Guidance Clinic undertook a Research Project consisting essentially in collecting data of patients and contacts in an attempt to obtain comparative evaluations of the Guidance Clinic's work in town and rural areas.

This study is not yet completed but additional staff, one Psychiatric Social Worker, one Psychologist (Pre-Masters) and one Clerk were hired during the six summer months, the time the majority of the data had to be collected.

232 patients were seen in the Research Project, 282 collaterals, 286 general contacts (discussions, meetings, social agencies, etc.) were held, and 211 psychological examinations were done giving an additional work load of 1,011 periods.

Because this was a separate project, financed separately, we have not included this with our regular work load.

PROVINCIAL GUIDANCE CLINIC, PONOKA

**F. J. Edwards, M.D.C.M., Specialists in Psychiatry, R.C.P.S.(C.),
Clinic Psychiatrist**

During 1964 Guidance Clinics were again conducted by members of the staff of the Provincial Mental Hospital, Ponoka, on a part-time basis. The work was carried out by various members of the medical staff, social workers and psychologists. There was a fairly steady demand for Guidance Clinic services for both children and adults. The staff engaging in this work are full-time hospital personnel. For statistical purpose, the writer will in this report include former patients who were seen at the Provincial Mental Hospital, Ponoka, or, periodically, at the Provincial Guidance Clinic, Calgary, by members of the Provincial Mental Hospital, Ponoka, medical staff. Children were seen at Clinics in Ponoka, Castor and Stettler. In 1964 a total of 873 cases were seen, 195 new and 678 re-registered cases.

Ponoka and Calgary

One hundred and eighty-five new and 670 registered cases were seen for a total of 855 cases. The cases were referred by general practitioners, parents, self, schools and Health Units. Three clinics were held in the Town of Ponoka.

Stettler and Castor

Two clinics were held in Stettler and one in Castor. A total of 18 cases were seen, 10 new and 8 re-registered. These were referred by the schools and Health Unit.

As in previous years, those examined were persons who presented some psychiatric, emotional or educational problem which was causing difficulty in adjustment in the home, school or community. In each case, efforts were made to evaluate the situation, and to come to some conclusion as to its cause. Advice was offered as to ways and means of dealing with the presenting situation, which often involved an attempt at environmental manipulation. Where local practitioners were involved, advice was given as required. In cases where epilepsy was considered in the differential diagnosis, arrangements were made for electroencephalography at the Provincial Mental Hospital, Ponoka. Educational problems, including reading difficulties and speech disorders, offer particular problems to the Clinic.

It should be noted that the greatest percentage of cases were in the re-registered category, and most of these cases were former patients of the Provincial Mental Hospital. Many of these cases were re-evaluated in regard to medication requirements, or otherwise were followed up in an effort to promote stabilization and avoid readmission to hospital.

PROVINCIAL GUIDANCE CLINIC, RED DEER

**L. J. le Vann, L.R.C.P. Edin., L.R.C.S. Edin.,
L.R.F.P.S. Glas., Clinic Psychiatrist**

The Red Deer Guidance Clinic was relatively well staffed during the reporting year due to the fact that it was possible to incorporate the therapists from Lindon House, a unit for Emotionally Disturbed Children, into clinic activities and during the latter part of the year to employ a full-time psychologist with a Master's Degree in Psychology.

Work Load

The work load was as follows:

	(Interviews and Therapy Sessions)
Psychiatrist	361
Psychologists and Social Workers	803
TOTAL	1,164
Psychometric and Projective Testing	167

New cases examined numbered 137, and 41 cases were re-registered. Therapy was carried out largely with younger children and there were many referrals from the Education authorities and the Family Court Judge.

Age and Sex Distribution

The major portion of referrals, 75%, were under the age of 18 years (51% males and 24% females). Adult referrals were also treated and represented the remaining 25%.

Summary

In view of the apparent increasing need for clinical services, recommendations were made that the clinic be expanded to a full-time service. It was necessary during the year to increase the number of afternoons from two to three and on occasions utilize additional mornings to cope with the therapeutic requirements.

The need for a clinic to visit outlying areas in central Alberta was also apparent, since several cases who should have been on a relatively frequent therapy regimen were unable to be seen due to the distance involved from the clinic and the fact that due to many other commitments it was not possible for the clinic staff to visit these more remote centres.

PROVINCIAL GUIDANCE CLINIC, CALGARY

N. C. Horne, M.B., M.R.C.S., D.P.M., Clinic Psychiatrist

The staff situation has been reasonably stable in 1964 with 10 full-time and 5 half-time professional staff at year end. Of these, 7 full-

time and 4 half-time had a continued service of not less than twelve months. The staff deficit over the year was 26% of the minimum requirement for efficient operation.

The senior staff psychologist achieved her Doctorate in December, 1964.

Two more offices were acquired in September, 1964.

The demand for clinic services continues:

TOTAL SERVICES FOR THE YEAR 1964:

New cases	669	(551)	Increase	118
Re-registered cases	485	(554)	Decrease	—69
	1,154	(1,105)	net Increase	+ 49

WORKLOAD:

Psychiatrists	4,794	(4,077)	Increase	717
Psychologists	5,065	(3,438)	Increase	1,627
Psych. Social Workers	8,685	(4,312)	Increase	4,373
	18,544	(11,827)		6,717

The increase in workload results from two factors—

- the steady work from a more stable staff, and
- the increasing skill which has allowed more intensive treatment which is the most important special function of the Clinic.

RURAL DISTRICTS

Number of visits	Cases Seen		Psychiatrist	Work Load		Psychiatric Social Worker	Total
	New	Old		Psychologist			
Drumheller							
6	18	7	165	48		49	262
Three Hills							
9	22	8	226	83		87	396
Hanna							
9	31	9	234	80		94	408
Total visits							
24	71	24	625	211		230	1,066

The number of travelling clinics requested shows a considerable increase over previous years and also allowed an increase in “follow-up” assessments to be undertaken, which do not show in the list of “Cases Seen”, as well as special consultations.

The increase is due to the spread of knowledge and interest in the various areas together with an increasing demand from the wide spread area of Big Country Health Unit, Hanna, Alberta.

The work load of 1,066 represents 5.7% of the work done in the clinic through the year and 13% of the psychiatrists' yearly work.

AGE AND SEX DISTRIBUTION OF NEW CASES:

Age Distribution	Percentages
0 - 5	20.2
6 - 11	48.0
12 - 17	25.5
19 - 23	3.6
24 years and over	2.7
	100.0

Proportion of males to females is 1.65:1.

REFERRALS TO CLINIC WERE MADE UP AS FOLLOWS:

Referral Source	Percentages
Self and family	34.8
School and School Authorities	16.1
Health Units	15.1
Private Doctors and Medical Clinics	14.0
Child Welfare Agencies	13.0
Miscellaneous Sources	7.0
	100.0

195 mentally defective cases were examined in 1964. (This figure cannot be compared with previous years as the numbers have been extended by a wider scale.) Of these, 26 were recommended for admission to the Provincial Training School and 3 to Deerhome.

One emotionally disturbed case was admitted to Linden House, Red Deer.

175 cases were recommended for Guidance Clinic treatment. This represents 15.1% of the total cases seen in the year and 26.2% of the new cases seen.

TREATMENT CARRIED OUT IN THE GUIDANCE CLINIC:

279 cases were treated in the Clinic of which 5 were on drug therapy.	
New cases	141
Old cases, continued into 1964	138
Total	279
Terminated in 1964	124
Much improved	33
Improved	64
Not improved	27
Continued into 1965	158
Number on Drugs in 1964:	
Old	5
New	0

GROUP THERAPY ARRANGEMENTS HAVE INCREASED:

Young Groups	5
Adult Groups	2
Adolescent Groups	2
Family Group Therapy (by individual Therapists)	

Individual therapy continues as previously. The "waiting list" of cases for treatment has now been eliminated: (1) Each worker has a list of "pre-treatment" cases which are followed up regularly or dealt with should a "crisis" occur; (2) Each worker has an established number of cases which is maintained and new treatment cases are taken on from their own or others' pre-treatment lists as necessary.

The Children's Aid Department and the Department of Public Welfare each have an "emergency" appointment weekly which they use as they wish so that emergent cases can be dealt with rapidly. This works very well.

ANALYSIS OF TIME SPENT ON THERAPY IN 1964:

	Psi.	Pso.	P.S.W.	Total
Individual Therapy	933 hrs.	813 hrs.	1,554 hrs.	3,300 hrs.
Group Therapy	69 hrs.	216 hrs.	238 hrs.	523 hrs.
Family Therapy	185 hrs.	.....	60 hrs.	245 hrs.
Pre-treatment Cases .....	.....	84 hrs.	313 hrs.	397 hrs.
TOTAL	1,187 hrs.	1,113 hrs.	2,165 hrs.	4,465 hrs.

All treatment cases are under psychiatric supervision (Dr. M. Horne) and the time spent is as follows: Psychiatric Supervision—300 hours.

Special Therapy Arrangements

(1) Special and tragic cases are those labelled "autistic" or "juvenile schizophrenia" or "sympiotic" or "psychotic" about which knowledge is only slowly accumulating. 19 cases have been seen in the last three years, the majority lying in ages between 3 and 7½ years. Currently there are 9 cases under treatment which is difficult, prolonged, involves also deep therapy for the mother and, at times, for the father. Such children cannot be handled in regular school.

One psychiatrist (Dr. M. Horne) and the non-medical staff undertake this responsibility. Each mother (and/or father) and child is seen weekly on therapy separately. But this in itself is not enough.

In April, May, and June, 1964, an experiment in physical activities (gymnasium and swimming) was started for 2 two-hour periods per week and was conducted with the helpful and generous co-operation of the Y.M.C.A. Director and members in Calgary on a one adult to one child basis. There was a very encouraging response from both children and parents. This activity had to stop over the summer months.

Under the initiative and drive of the psychiatrist, on November 9, 1964, in St. Anthony's Hall, classes were started under one very suitable teacher with regular volunteers so that each child had a one-to-one relationship with an adult during each session in class. Each child attends each morning or afternoon five days a week. Only those under active treatment attend. This was made possible by the financial generosity and understanding of the Junior League, the warmth and keenness of the volunteers (briefed by the Psychiatrist), the generosity of the Canadian Mental Health Association who loan their bus for transport, the firemen of Calgary who take turns in driving, and the enthusiasm of Mr. R. Thompson (who started driving and is now spare driver). This support continues until September, 1965, when it is hoped that the Calgary School Board will take over responsibility for those of school age; the pre-school children may have to remain the responsibility of a "day hospital" arrangement in the future.

The response by children and parents to the skilled psychiatric handling and this addition to treatment has already been very encouraging.

(2) In assessment and disposal of most agency cases, during the intake case conference, the agency worker is invited to attend and participate. These invitations are increasingly accepted, the practice is useful and popular, and both general medical practitioners and other specialists are beginning to participate with benefit to all concerned. Especially is this helpful in such as legal, care and protection, battered-child and other cases. Speech therapists in hospitals and clinics have also attended.

Educational Activities

22 talks, addresses and special demonstrations were carried out throughout the year.

In-service training was carried out for all staff for a period of two hours per week throughout the year, including six hours of didactic lectures covered by the Clinic Director.

This does not include the educational value included in psychiatric, social work and psychology supervision periods. Psychiatric Supervision—6 hours per week, Social Work Supervision—1 hour per week (case work), Psychology Supervision—1 hour per week.

Visiting Psychiatrists

Psychiatrists from the Provincial Mental Hospital, Ponoka, continue to attend on a weekly basis, mostly for the whole Wednesday in order to follow-up discharged patients and interview others. This is a very satisfactory and useful liaison:—

NUMBER OF DOCTOR SESSIONS

	Number seen		Total
	Male	Female	
10 Doctors attended for 41 sessions	358	141	499

Conventions and Institutes:

Canadian Psychiatric Association Meeting, Vancouver—June, 1964

Dr. Margaret M. Horne, Psychiatrist

Canadian Psychological Association Meeting, Halifax—June, 1964

Dr. Jean L. Pettifor, Senior Psychologist

Group Processes Institute, Banff—September, 1964

Mrs. Eileen Gorrill, Psych. Social Worker

The Clinic staff greatly appreciated the opportunity to attend and this resulted in increased stimulation and knowledge and allowed liaison with external colleagues, which could not otherwise have taken place, with a sharing of knowledge and experience.

PROVINCIAL GUIDANCE CLINIC, LETHBRIDGE**John Bower, M.D., D.P.M., Clinic Psychiatrist**

The clinic staff consisted of one full-time psychiatrist, one full-time psychologist and one full-time social worker. A graduate of the School of Social Work of the University of Colorado joined the staff in July on a full-time basis. A graduate student in psychology was on staff during summer vacation, and a medical student was on staff as a social worker during the same period.

WORK LOAD

New Cases Registered		Re-registered	Work Load Periods
Lethbridge	431	174	(Total—Lethbridge
Rural Areas	48	15	and rural areas) .....4,871
Brooks, Crowsnest Pass, Pincher Creek, Vulcan			

Four hundred and thirty-one new cases were registered at the Lethbridge Clinic during the year. A total of forty-eight new cases and fifteen re-registered cases comprised the rural clinic work load. Clinic visits were made to Vulcan, Pincher Creek, Crowsnest Pass and Brooks.

Clinic services were initiated in the Brooks area this year on popular demand. Total work load periods for the Lethbridge and rural areas' clinics were four thousand, eight hundred and seventy-one.

The director and a psychologist visited the branch clinic at Medicine Hat on a monthly basis and in addition as required. The statistics for the Medicine Hat Clinic appear separately.

A fall in registration was noted toward the end of the year. In actual fact a record number of cases would have been registered, but due to the illness of the staff member, the clinic was unable to accept them during the last quarter of the year.

Treatment Procedures

Treatment procedures have been carried out using psychotherapy, play therapy, counselling and other forms of treatment. Guidance Clinic cases were treated in hospital during the year. All professional staff take part in therapy and it is hoped to increase this for them. The majority of the patients have benefited from treatment.

Clinic Services

Clinic services were given to the law courts, police, schools, physicians, and the School for Retarded Children, and prison visits were made on request. Where necessary, the inmates were brought to the clinic for further examination and treatment. Two visits were made to the Provincial Mental Hospital, Claresholm. Numerous cases were seen by staff members at the local hospitals and home visits, if needed, were made.

Public Education

Speaking engagements, participation in education and social welfare conferences, appearances on radio and television by the staff members have helped to promote public understanding of mental health projects and the work of the clinic in this field. The usual good relationships have been maintained with doctors and clergy, who may refer many cases to the Clinic.

Training Program

Because of the changing staff position, the in-service portion of the training program was variable. The usual lectures to student nurses were given. The research program involving selection of student nurses was continued.

MEDICINE HAT—BRANCH OF THE PROVINCIAL GUIDANCE CLINIC, LETHBRIDGE

John Bower, M.D., D.P.M., Clinic Psychiatrist

The Branch Office of the Lethbridge Guidance Clinic, Medicine Hat, is staffed by a full-time social worker and one full-time clerical staff worker. The clinic director, who is stationed at Lethbridge, visits the Medicine Hat facility on a monthly basis and as required. Psychological services are also provided by the Lethbridge Clinic.

WORK LOAD

New Cases Registered
87

Re-registered
89

Work Load Periods
1,355

Public Education

Information pertaining to Mental Health topics was provided by lectures and demonstrations. A continued effort was made to interpret the work of the clinic, particularly with respect to preventive and restorative functions.

Appreciation

Continued support by school authorities, physicians, public health nurses and social agencies' staffs and other interested organizations and individuals is greatly appreciated.

TABLE 1
PROFESSIONAL STAFF, NEW AND RE-REGISTERED CASES, TREATMENT PERIODS, INTERVIEWS, PSYCHOLOGICAL EXAMINATIONS, AND WORK LOAD BY CLINIC AREAS, 1964

CLINIC AREA	STAFF			NEW CASES		RE-REGISTERED CASES			DISTRIBUTION OF WORK				Work Load
	Psychia- trists	Psycho- gists	Social Workers	M	F	T	M	F	T	Pat.	Col.	Gen.	P. E.
Edmonton and District	4 2/12	7 11/12	7 1/12	1,257	653	1,910	430	260	720	4,832	6,931	7,795	2,652
Calgary and District	2 5/12	5 2½/12	5 3/12	417	252	669	361	124	485	3,384	4,840	9,166	1,154
Lethbridge, Medicine Hat and Districts	1	1 4/12	1 10/12	287	277	564	169	109	278	2,386	2,791	494	575
Ponoka	Part time staff drawn from Provincial Mental Hospital, Ponoka, Provincial Training School			118	77	195	553	125	678	869	194	105	74
Red Deer and District				81	56	137	24	17	41	504	493	....	167
TOTALS	7 7/12	14 5½/12	14 2/12	2,160	1,315	3,475	1,567	635	2,202	11,975	15,249	17,560	4,622
													49,406

Total new cases since 1929—38,326.

Edmonton and District—Area East and West from Wetaskiwin North. Clinics held in Athabasca, Barrhead, Bonnyville, Camrose, Edson, Fort McMurray, Holden, Killam, Lac La Biche, Lamont, Peace River, Grande Prairie, Smoky Lake, St. Paul, Two Hills, Thorhild, Vegreville, Vermilion, Westlock and Wetaskiwin.

Calgary and District—Area East and West from Didsbury to Claresholm. Clinics held in Drumheller, Three Hills and Hanna.

Lethbridge and Medicine Hat Districts—Area East and West from Claresholm South. Clinics held in Brooks, Crowsnest Pass, Pincher Creek and Vulcan.

Ponoka, Red Deer and Districts—East and West from Wetaskiwin to Didsbury. Clinics held in Castor, Stettler, Rimbey, Rocky Mountain House, Ponoka, and Red Deer.

New Cases—Patients examined for the first time by any Guidance Clinic in the Province.

Re-Registered Cases—Patient has been examined in Provincial Guidance Clinic prior to present year.

Pat.—Patient Interview, Diagnosis or Therapeutic.

Col.—Collateral Contact with Parents, Relatives or those closely interested or related to the patient.

Gen.—General Contact regarding Clinic activity, including those with other agencies and community services including talks, addresses and teaching periods by staff members.

P. E.—Psychological Examinations and Tests.

TABLE 2
AGE AND SEX CLASSIFICATION OF NEW CLINIC CASES

AGE GROUP	EDMONTON AND DISTRICT			CALGARY AND DISTRICT			LETHBRIDGE, MEDICINE HAT AND DISTRICT			PONOKA AND RED DEER DISTRICT			TOTALS			PERCENTAGES		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
0 - 5	193	131	324	80	55	135	30	12	42	7	4	11	310	202	512	14.4	15.4	14.8
6 - 11	692	272	964	227	94	321	96	60	156	58	25	83	1,073	451	1,524	49.6	34.3	43.8
12 - 17	336	195	531	93	78	171	50	57	107	38	26	64	517	356	873	24.0	27.1	25.1
18 - 23	14	28	42	11	13	24	32	78	110	8	10	18	65	129	194	3.0	9.8	5.6
24 - 29	8	6	14	4	1	5	19	14	33	17	7	24	48	28	76	2.2	2.1	2.1
30 - 49	10	16	26	2	10	12	43	38	81	34	55	89	89	119	208	4.1	9.0	6.1
50 and over	4	5	9	....	1	1	14	15	29	37	6	43	55	27	82	2.5	2.1	2.3
Unknown	....	....	....	....	....	....	3	3	6	....	....	....	3	3	6	.2	.2	.2
TOTALS	1,257	653	1,910	417	252	669	287	277	564	199	133	332	2,160	1,315	3,475	100.0	100.0	100.0

TABLE 3A
DIAGNOSTIC CLASSIFICATION OF NEW CLINIC CASES—PRE-SCHOOL AGE GROUP (0 to 5 years 11 months)

Diagnosis	Edmonton and District			Calgary and District			Lethbridge, Medicine Hat and District			Ponoka and Red Deer District			Totals			**Percentage of Totals		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Acute Brain Disorders	56	53	109	12	16	28	1	1	1	4	4	4	72	69	1	23.1	5	2
Chronic Brain Disorders	1	1	2	3	3	6	1	1	1	1	1	1	4	4	1	34.3	27.5	27.5
Psychotic Disorders	1	1	2	3	3	6	1	1	1	1	1	1	4	4	1	1.3	1.3	1.3
Psycho Physiological Disorders	29	37	66	9	4	13	1	1	1	1	1	1	2	2	1	3	3	3
Psychoneurotic Disorders	47	21	68	29	14	43	1	1	1	1	1	1	43	36	2	13.9	7.0	11.1
Personality Disorders	33	22	55	9	11	20	1	1	1	1	1	1	79	42	1	23.3	17.9	22.4
Transient Situational Disorders	3	3	6	7	2	9	1	1	1	3	3	5	55	42	1	17.6	20.9	19.0
Mental Deficiency*	18	15	33	10	7	17	3	2	5	2	2	3	31	24	6	4.5	3.0	3.9
Diagnosis Deferred	4	4	8	1	1	2	3	2	3	1	1	1	7	1	1	9.9	11.9	10.7
Normal Child	4	8	12	1	1	2	3	2	3	1	1	1	4	8	1	2.2	5	1.6
Examination or Test Only	4	8	12	1	1	2	3	2	3	1	1	1	4	8	1	1.3	4.0	2.3
Organic Disease	4	8	12	1	1	2	3	2	3	1	1	1	4	8	1	1.3	4.0	2.3
TOTALS	195	130	325	80	55	135	30	12	42	7	4	11	312	201	513	100.0	100.0	100.0

*Mental Deficiency—Hereditary, Idiopathic, but not as a secondary diagnosis.

**Percentage—M = % of Total New Males, F = % of Total New Females, T = % of Total New Cases.

TABLE 3B
DIAGNOSTIC CLASSIFICATION OF NEW CLINIC CASES—SCHOOL AGE GROUP (6 years to 17 years 11 months)

Diagnosis	Edmonton and District			Calgary, and District			Lethbridge, Medicine Hat and District			Ponoka, and Red Deer District			Totals			**Percentage of Totals		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Acute Brain Disorders	132	66	198	1	12	13	1	2	3	3	5	8	1	77	228	2	1	1
Chronic Brain Disorders	3	1	4	3	3	6	1	2	3	13	13	26	20	3	23	9.5	9.5	9.5
Psychotic Disorders	5	4	9	3	1	4	2	1	3	7	7	14	10	7	17	1.3	1.3	1.3
Psycho Physiological Disorders	17	10	27	6	4	10	3	3	6	18	25	43	31	35	66	1.9	4.3	7
Psychoneurotic Disorders	224	66	290	85	36	121	23	8	31	24	31	55	356	117	473	22.3	14.5	19.6
Personality Disorders	371	191	562	157	83	240	30	19	49	17	15	32	573	308	883	36.2	38.0	36.8
Transient Situational Disorders	170	85	255	34	23	57	41	27	68	21	7	28	266	145	411	16.7	18.0	17.1
Mental Deficiency*	31	10	41	9	6	15	35	18	53	4	1	5	79	35	114	5.0	4.3	4.8
Diagnosis Deferred	48	21	69	10	8	18	1	31	32	4	4	8	63	30	93	4.0	7.5	5.2
Normal Child	8	3	11	.....	.....	.....	10	6	16	1	1	2	19	10	29	1.2	1.3	1.2
Examination or Test Only	18	10	28	.....	.....	.....	.....	.....	.....	.....	.....	.....	18	10	28	1.1	1.2	1.2
Organic Disease	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
TOTALS	1,027	468	1,495	320	172	492	146	117	283	96	51	147	1,589	808	2,397	100.0	100.0	100.0

*Mental Deficiency—Hereditary, Idiopathic, but not as a secondary diagnosis.
**Percentage—M = % of Total New Males, F = % of Total New Females, T = % of Total New Cases.

TABLE 3C
DIAGNOSTIC CLASSIFICATION OF NEW CLINIC CASES—ADULT GROUP (18 years and over)

Diagnosis	Edmonton and District			Calgary and District			Lethbridge, Medicine Hat and District			Ponoka and Red Deer District			Totals			**Percentage of Total		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Acute Brain Disorders	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...
Chronic Brain Disorders	9	5	14	...	...	...	4	...	...	4	...	...	17	15	32	6.6	4.9	2
Psychotic Disorders	1	4	5	...	...	...	14	...	...	5	...	...	20	25	45	7.7	8.1	5.6
Psycho Physiological Disorders	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Psychoneurotic Disorders	6	16	22	...	...	...	...	...	...	...	...	...	82	81	163	...	...	...
Personality Disorders	3	5	8	...	...	...	7	...	...	67	...	...	32	24	56	31.7	26.7	29.0
Transient Situational Disorders	7	13	20	...	...	...	14	...	...	5	...	...	18	21	39	12.3	7.9	9.9
Mental Deficiency*	5	8	13	...	...	...	4	...	...	3	...	...	5	19	33	7.0	6.9	6.9
Diagnosis Deferred	...	...	...	...	...	...	5	...	...	8	...	...	34	33	67	5.4	6.2	5.8
Normal Child	3	1	4	...	...	...	26	...	...	8	...	...	19	62	81	13.1	10.8	11.9
Examination or Test Only	1	1	2	...	...	...	16	...	...	1	...	...	22	21	43	7.3	20.4	14.4
Organic Disease	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTALS	35	55	90	17	25	42	111	147	258	96	78	174	259	305	564	100.0	100.0	100.0

*Mental Deficiency—Hereditary, Idiopathic, but not as a secondary diagnosis.
**Percentage—M = % of Total New Males, F = % of Total New Females, T = % of Total New Cases.

TABLE 4
SOURCES REFERRING NEW CASES TO THE CLINICS

Referral Source	Edmonton and District			Calgary and District			Lethbridge, Medicine Hat and District			Ponoka and Red Deer District			Totals			Percentage of Total		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
School and School Authorities..	425	130	585	71	37	108	58	115	173	33	27	60	587	339	926	27.3	25.7	26.7
Private Doctors and Medical Clinics	215	118	333	56	38	94	60	64	124	107	55	162	438	275	713	20.4	20.9	21.0
Medical Clinics, Rehabilitation Cerebral Palsy, T.B., O.P.D.	30	30	60	....	5	5	2	1	3	2	1	3	34	37	71	1.6	2.8	2.0
Health Units, Public Health Nurse, Medical Officer of Health	156	86	242	73	28	101	51	27	78	7	2	9	287	143	430	12.8	10.9	12.4
Child Welfare—Provincial and Municipal	114	76	190	41	46	87	17	13	30	5	11	16	177	146	323	8.2	11.1	9.1
Juvenile and Family Courts, Gaols, Bowden Institute ..	8	5	13	4	5	9	26	2	28	7	2	9	45	14	59	2.1	1.1	1.4
Parents, Relatives, Friends and Self	281	157	438	160	73	233	59	45	104	33	30	63	533	305	838	24.7	23.2	24.1
Dept. of Public Health (Provincial)	4	5	9	....	4	4	5	4	9	4	4	8	13	17	30	.7	1.3	.8
Others	24	16	40	12	16	28	9	6	15	1	1	2	46	39	85	2.2	3.0	2.5
TOTALS	1,257	653	1,910	417	252	669	287	277	564	199	133	332	2,160	1,315	3,475	100.0	100.0	100.0

TABLE 5
MAJOR RECOMMENDATIONS MADE IN REGARD TO NEW CLINIC CASES

Recommendation	Edmonton and District			Calgary and District			Lethbridge, Medicine Hat and District			Ponoka and Red Deer District			Totals			Percentage of Totals			
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	
Admission to:																			
(a) Mental Hospital	4	4	8		1		1	20	10	30	8	3	11	33	17	50	1.5	1.2	1.5
(b) Provincial Training School and Deerhome	32	32	64	11	15		26	4	2	6	7	1	8	54	50	104	2.5	3.8	3.0
Placement in Protective or Correctional Home or Institution	18	14	32	1	7		8		2	2	5	1	6	24	24	48	1.1	1.8	1.4
Placement in Foster Home	15	11	26	11	5		16	2		2	1	1	2	29	17	46	1.3	1.2	1.3
Educational Advice, Modified School, Special Class, Vocational	365	156	521	47	28		75	39	25	64	21	10	31	472	219	691	21.9	16.6	19.8
Educational Advice, Others	108	43	151	10	2		12	1	1	2	13	5	18	132	51	183	6.1	3.9	5.3
Modified Home Management	333	159	492	178	75		253	14	6	20	8	3	11	533	243	776	24.7	18.5	22.3
Referred for Medical Treatment	102	71	173	1	4		5	5	9	14	12	13	25	120	97	217	5.6	7.5	6.3
Treatment in Guidance Clinic	123	71	194	111	64		175	72	47	119	100	76	176	406	258	664	18.8	19.6	19.1
Others	157	92	249	46	52		98	130	175	305	24	20	44	357	339	696	16.5	25.9	20.0
TOTALS	1,257	653	1,910	417	252		669	287	277	564	199	133	332	2,160	1,315	3,475	100.0	100.0	100.0

TABLE 6
SUMMARY OF NUMBER OF MENTAL DEFECTIVES EXAMINED BY YEARS

Year	SEVERE I.Q. Below 50			MODERATE I.Q. 50-69			MILD I.Q. 70-85			UNSPECIFIED			Totals			Percentage of New Cases	Cumulative Totals
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T		
Number of Mental Defectives Examined to 1958																	
1958	16	11	27	38	29	67	119	80	199	24	27	51	197	147	344	18.7	5286
1959	13	10	23	56	44	100	159	121	280	27	15	42	255	190	445	22.3	5610
1960	3	1	4	37	34	71	137	98	235	20	11	31	197	144	341	16.2	6055
1961	13	14	27	40	33	73	154	118	272	55	38	93	262	203	465	20.2	6861
1962	10	9	19	51	42	93	142	106	248	46	40	86	249	197	446	16.9	7307
1963	20	10	30	59	48	107	194	142	336	76	53	129	349	253	602	20.0	7909
1964	60	62	122	148	117	265	356	196	552	49	37	86	613	412	1,025	27.9	8934

Notes: I.Q. Intelligence Quotient
M—Male, F—Female, T—Totals

ACTIVE TREATMENT MENTAL HOSPITALS

THE PROVINCIAL MENTAL HOSPITAL, PONOKA
THE PROVINCIAL MENTAL INSTITUTE, EDMONTON

The Provincial Mental Hospital, Ponoka, admitted 1,284 patients—(756 males, 528 females, including re-admissions). The Provincial Mental Institute, Edmonton, admitted 1,562 patients—(920 males, 642 females—including re-admissions). The total number of admissions to these Hospitals was 2,846 patients—(1,676 males, 1,170 females). The total number of admissions (including re-admissions) was 160 greater than the previous year. Again this increase might be explained in part by the increased demand for the admission of seniles, and an increase in the general population of the Province. The Provincial Mental Hospital, Ponoka, admitted 37 remand cases, whereas the Provincial Mental Institute, Edmonton, reported the admission of 224 remand cases in the same period.

The discharge rate of the two hospitals averaged approximately 83 per cent. This was about the same as the previous year.

The combined population of the Provincial Mental Hospital, Ponoka, and the Provincial Mental Institute, Edmonton, on December 31st, 1964, numbered 2,509—(1,671 males, 838 females)—an increase of six over the previous year.

Both active treatment hospitals reported increased activity in their treatment programs, consisting of the use of tranquillizer and anti-depressant drugs, group and individual therapy and activities, and occupational therapies. It was again reported that electro-convulsant treatments were reduced in number. Emphasis was placed again on the "open-door" policy.

Both hospitals reported that their treatment programs for alcoholics continued to meet with considerable success and that these were to be expanded.

The Provincial Mental Hospital, Ponoka, in conjunction with the Canadian Mental Health Association, established a foster-home program in Calgary. Twenty-four patients were placed in eight private homes. Six of these patients became self-supporting and three returned to the Hospital. The remainder functioned adequately in the community, with welfare assistance.

The Provincial Mental Hospital, Ponoka, transferred six mentally deficient patients to Deerhome. The Provincial Mental Institute, Edmonton, transferred ten mentally deficient patients to the same institution. The Provincial Mental Hospital, Ponoka, transferred twenty senile patients to Rosehaven, Camrose. The Provincial Mental Institute, Edmonton, transferred 105 senile patients to the same institution during the year. The Provincial Mental Hospital, Ponoka, transferred 28 female patients to the Provincial Mental Hospital, Claresholm, and the Provincial Mental Institute, Edmonton, sent 29 female patients to the latter institution.

During the year a committee of fourteen, appointed by the Honourable, the Minister of Health, met on many occasions with a view to finalizing a new Mental Health Act, so that it might become effective on the first day of the New Year.

The various Nurses' Training Programs continued in both active treatment mental hospitals. Twelve students completed the four-year course in General and Psychiatric Nursing at the Provincial Mental Hospital, Ponoka. Seven male students completed the three-year course in Psychiatric Nursing, and 15 Graduate Nurses completed the six-month Post-Basic Course at the same hospital. In addition, 220 undergraduate students from the General Hospital Schools of Nursing of the southern part of the Province received the eight-week affiliation course in Psychiatric Nursing in the Provincial Mental Hospital, Ponoka. At the Provincial Mental Institute, Edmonton, 29 students (three men, 26 women)—completed the three-year course in Psychiatric Nursing, while 303 affiliating students from the General Hospital Nursing Schools in the northern part of Alberta received a period of eight-weeks' training.

Of major importance during the year was the opening in August of the new reception-administration building at the Provincial Mental Hospital, Ponoka. Some renovation took place at the Provincial Mental Institute, Edmonton.

TABLE 1
TABULATED SUMMARY—INSTITUTIONS—MOVEMENT OF POPULATION

Institutions	Patients in Hospital December 31, 1963			Admissions (Excluding Transfers)			Discharges (Excluding Transfers)			Deaths			Patients in Hospital December 31, 1964		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
ACUTE MENTAL HOSPITALS:															
P.M.H., Ponoka	669	393	1062	756	528	1284	652	489	1141	46	27	73	727	373	1100
P.M.I., Edmonton	979	462	1441	920	642	1562	790	544	1334	90	28	118	944	465	1409
Total	1648	855	2503	1676	1170	2846	1442	1033	2475	136	55	191	1671	838	2509
CHRONIC MENTAL HOSPITALS:															
Rosehaven, Camrose	285	216	501	....	1	1	....	....	....	79	44	123	285	215	500
P.M.H., Claresholm .....	....	196	196	....	1	1	....	1	1	....	6	6	....	231	231
P.A.M.H., Raymond .....	....	124	124	....	2	2	....	1	1	....	5	5	....	116	116
Total	285	536	821	....	4	4	....	2	2	79	55	134	285	562	847
INSTITUTIONS FOR MENTAL DEFECTIVES,															
RED DEER:															
Provincial Training School	477	367	844	41	43	84	20	15	35	7	3	10	483	386	869
Deerhome	512	446	958	24	25	49	7	3	10	6	7	13	517	457	974
Total	989	813	1802	65	68	133	27	18	45	13	10	23	1000	843	1843
UNIT FOR EMOTIONALLY DISTURBED															
CHILDREN:															
Linden House, Red Deer	12	6	18	8	7	15	7	5	12	....	....	....	12	7	19
Overall Totals	2934	2210	5144	1749	1249	2998	1476	1058	2534	228	120	348	2968	2250	5218

TABLE 2
FIRST ADMISSIONS DURING 1964 BY PSYCHOSES

DIAGNOSTIC CLASSIFICATION	Male	Female	Total
Schizophrenia (All Categories)	139	94	233
Manic Depressive (All Categories)	35	18	53
Involucional Melancholia	18	22	40
Paranoia and Paranoid States	19	10	29
Senile Psychosis	96	67	163
Pre-Senile Psychosis	6	1	7
Psychosis with Cerebral Arteriosclerosis	72	30	102
Alcoholic Psychosis	35	5	40
Psychosis of Other Demonstrable Etiology	7	3	10
Other and Unspecified Psychoses	17	24	41
Anxiety Reaction	14	14	28
Hysterical Reaction	9	5	14
Obsessive-Compulsive Reaction	3	1	4
Neurotic Depressive Reaction	65	91	156
Other and Unspecified Psychoneurotic Reactions	13	29	42
Pathological Personality (All Categories)	84	29	113
Immature Personality	17	26	43
Childhood Behaviour Disorders	11	11	22
Alcoholism Without Psychosis	210	30	240
Other Drug Addiction	2	6	8
Mental Deficiency Without Psychosis	13	13	26
Other and Unspecified Disorders of Character, Behaviour and Intelligence	14	18	32
Paralysis Agitans	1	0	1
Epilepsy	7	2	9
Mental Observation Without Need for Psychiatric Care	45	16	61
Nervousness and Debility	1	2	3
Puerperal Psychosis	0	10	10
Other Diseases of Brain	2	0	2
Other Non-Psychiatric Conditions	1	0	1
TOTALS	956	577	1,533

TABLE 3—TABULATED SUMMARY OF DEATHS IN INSTITUTIONS DURING 1964

DISEASE	P.M.H., Ponoka			P.M.I., Edmonton			P.M.H., Claresholm			P.A.M.H., Raymond			Rosehaven Camrose			P.T.S., Red Deer			Deerhome, Red Deer			TOTALS			
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	
Syphilis and its Sequelae	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1
Meningococcal Infections	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	0	1
All Other Diseases Classified as Infective and Parasitic	0	0	0	3	1	4	0	0	0	0	0	1	1	2	0	0	0	0	0	0	4	2	6	2	6
Neoplasms Malignant	2	0	2	3	1	4	0	0	0	0	0	2	0	2	0	0	0	1	1	7	2	9	2	9	
Neoplasms Benign	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	
Neoplasms Affecting Central Nervous System	2	3	5	6	4	10	0	3	3	0	0	1	1	2	1	0	1	1	0	1	11	11	22	22	
Chronic Rheumatic Heart Disease	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	2	
Arteriosclerotic and Degenerative Heart Disease	6	7	13	33	11	44	0	0	0	4	4	25	18	43	0	0	0	0	1	1	64	41	105	105	
Other Diseases of the Heart	4	2	6	0	0	0	0	2	2	0	0	0	0	0	0	0	0	2	0	4	6	4	10	10	
Hypertension with Heart Disease	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	
Pneumonia	22	10	32	28	7	35	0	0	0	0	0	47	24	71	2	2	4	0	4	4	99	47	146	146	
Bronchitis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	1	
Ulcer of Stomach and Duodenum	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	2	0	2	0	2	
Intestinal Obstruction and Hernia	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1	1	0	1	3	0	3	3	
Gastritis	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	1	
Cirrhosis of Liver	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1	1	
Nephritis and Nephrosis	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3	3	3	
Congenital Malformations	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	2	1	3	3	3	
Senility without mention of Psychosis, Ill-defined and Unknown Causes	1	0	1	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	7	7	7	
All Other Diseases	6	3	9	8	4	12	0	1	1	0	0	0	0	0	0	0	0	0	0	14	8	22	22	22	
GRAND TOTALS	46	27	73	90	28	118	0	6	6	0	5	79	44	123	7	3	10	6	7	13	228	120	348	348	

NOTE: Linden House—Unit for Emotionally Disturbed Children—No Deaths.

PROVINCIAL MENTAL HOSPITAL, PONOKA

T. C. Michie, M.D., R.C.P.S.(C.), Medical Superintendent

PATIENT POPULATION CHANGES

A total of 1,062 patients were in residence on January 1st, 1964, of whom 669 were male and 393 female. On December 31st, 1964, 1,100 patients were in residence of whom 727 were male, and 373 female.

ADMISSION OF PATIENTS

Exclusive of transfers from other provincial psychiatric facilities, there were 1,284 admissions of whom 756 were male, and 528 female. This was the greatest number in the history of the hospital and an increase of over 10 per cent as compared with the preceding year.

In addition, nine patients were received by transfer from other provincial psychiatric facilities.

SEPARATION OF PATIENTS

There were 1,141 discharges of whom 652 were male, and 489 female. This was an increase of 112 over the previous year.

Sixty patients were transferred to other provincial psychiatric facilities.

There were 73 deaths.

Details regarding patient movement are as set out in Table I.

ACCIDENTS AND ELOPEMENTS

Five men and six women suffered fractures. For the most part these were among the aged, and they were treated surgically after transfer to the Red Deer General Hospital.

There was one suicide.

A small number of patients left the hospital without permission.

GENERAL HEALTH OF PATIENTS

This was maintained at an excellent level throughout the year. There were no epidemics.

Three patients were transferred to the Tuberculosis Unit at the Provincial Mental Institute, Edmonton for investigation or treatment. Patients were referred, as necessary, to the Cancer Clinic in Edmonton for diagnosis and treatment. Several patients were transferred to the Provincial Mental Institute, Edmonton temporarily in order to facilitate treatment at the Cancer Clinic.

CLINICAL WORK

The program was varied and involved patients, either individually or in groups. With the latter, this varied, according to the needs of the individuals concerned, from formal psychotherapy to activities which could be considered industrial therapy, with emphasis, to a degree, on the monetary profit motive.

Drugs and electro-convulsive therapy were used, when indicated.

The treatment program instituted for alcoholics in 1963 was continued, and it was felt, with a degree of success.

Formal Occupational Classes were conducted in the main studios, and to some extent in areas throughout the hospital with the interest chiefly centred on the crafts.

Private medical practitioners from the Town of Ponoka visited the hospital daily, and were of great assistance in the treatment of the general run of physical illnesses of the patients, and met emergencies requiring surgical intervention.

Specialists from Edmonton and Red Deer were called, as required, for diagnostic or special surgical procedures.

The After-Care Clinic in Calgary was continued on a bi-weekly, and sometimes weekly basis. It was often found necessary to have two physicians in attendance because of the number of patients requiring help.

All electroencephalographic tracings were interpreted by a Neurologist at the University Hospital in Edmonton.

A Guidance Clinic team from the hospital continued to serve a limited area in Central Alberta.

A psychiatric consultant service was provided for patients at Deerhome.

RECREATIONAL THERAPY

There was no essential change in the recreational program. It was active and varied, and designed to encompass almost the entire patient population, in keeping with the needs of the individuals or groups. With the assistance of the Canadian Mental Health Association, a camp area was developed in a location approximately eight miles from the hospital.

Liaison was maintained with the various social agencies functioning in the area served by the hospital.

A number of excursions by bus were arranged to Banff and Jasper National Parks, for long care patients. The expenses were met, to some extent, by a donation from a volunteer group, and partially from money provided by the patients' own contributions.

RELIGIOUS SERVICES

The Clergy from the Town of Ponoka continued to conduct regular services, as in previous years, and were active in pastoral work, among the patients. They had free access to the hospital, and their interest was much appreciated by both patients and staff members.

SOCIAL SERVICES — SOCIAL WORKERS

The Social Work Staff consisted of two men, one of whom was a Social Worker and the other a Psychiatric Nurse with long experience and a special interest in this field. Their activities were extremely varied, and divided between work at the hospital, and follow-up cases after discharge. With a considerable number of in-patients, arrangements were made for Correspondence Courses with The Department of

Extension of the University of Alberta. Planning was carried out regarding discharges, and in many instances, arrangements made for the subsequent employment of patients in industry. A great deal of attention was directed to employment in the hospital setting with the aim that such activity be therapeutically oriented. No one received remuneration from the hospital, but many were concerned with projects from which it was possible to direct the financial returns to the participating patients. It was estimated that during the year individuals and groups of patients collectively earned approximately \$6,000.00.

In conjunction with the Canadian Mental Health Association, a foster home program was inaugurated in Calgary. Twenty-four patients were placed in eight private homes. Six of these patients have become self-supporting, and three returned to the hospital. The remainder are functioning adequately with welfare assistance in the community.

PSYCHOLOGICAL SERVICES — PSYCHOLOGISTS

The services of two Psychologists were available until last September, when one returned to the University of Alberta to further her education. Assistance was given with group therapy, the Nursing Educational Program, and in a variety of other hospital activities. Almost 400 psychological tests were administered. The Psychologists also assisted with out-patient work at the hospital, and travelled with the Guidance Clinic team which originated at this hospital. They gave assistance to the School of Nursing in assessing candidates.

VOLUNTEER SERVICES

A great many individuals and organizations gave assistance in a number of ways. Special mention should be made of the Women's Hospital Auxiliary, the members of which served faithfully in the apparel shop, and to a limited degree in arranging social activities in different areas of the hospital.

DENTAL SERVICES

A full-time Dentist was employed. The number of examinations carried out exceeded 2,900, and many hundreds of specific procedures were completed. These ranged from simple fillings to the fitting of dentures and the usual dental needs in a large hospital population. Dental services were also supplied to the Provincial Mental Hospital at Claresholm and the Provincial Auxiliary Mental Hospital at Raymond.

X-RAY SERVICES

Two Technicians were employed and over 3,200 plates taken. All chest plates on patients and staff were referred to the Medical Staff of the Baker Memorial Sanatorium, Calgary for interpretation. Plates were referred to Specialists in Edmonton and Red Deer for interpretation, when considered necessary.

LABORATORY

For the first six months, the services of a part-time Pathologist were available. During much of the year, three Technicians were employed, one of whom had medical training with a background in pathology.

Eighteen post-mortem examinations were made, and a wide range of laboratory procedures carried out. In many instances, specimens were referred to the Provincial Laboratory, Edmonton, and on occasions to the University Hospital Laboratory.

MEDICAL EDUCATION

The hospital continued to function as a clinical area for the instruction of senior Medical Students. The staff Physicians participated in the activities of the District Medical Society. The Clinical Director attended the Mental Hospital Institute of the American Psychiatric Association at Dallas, Texas.

The Assistant Medical Superintendent was in attendance at the Convention of the Canadian Medical Association and the Canadian Psychiatric Association at Vancouver, British Columbia.

SCHOOL OF NURSING

There was no essential change in the Teaching Program. More than 50 students enrolled in the four-year Course leading to qualification in General and Psychiatric Nursing. Twelve students graduated in August.

There were 38 students enrolled in the three-year Course in Psychiatric Nursing, and seven graduated in August.

Fifteen students were enrolled in the Post-Basic Course for Graduate Nurses.

220 Student Nurses received instruction in the Affiliation Course arranged with the Schools of Nursing from the southern part of the Province. Each group consisted of from 30 to 40 students, and they received eight weeks' instruction at this hospital.

Instruction was given periodically to groups of Nursing Aides and Ward Aides in the Elementary Nursing Arts and Psychiatric Nursing.

A group of Public Health Nursing Students from the University of Alberta spent two weeks in field work at this hospital.

Seven students in Occupational Therapy from the University of Alberta were in attendance for an eight-week period.

The full-time Teaching Staff consisted of ten Instructors, under the supervision of the Director of Nursing Education. Seven of the Instructors had special qualification in Teaching, and one a Diploma in Public Health Nursing.

VISITORS TO HOSPITAL

There were a number of distinguished visitors during the year, including the Honourable Dr. J. Donovan Ross, the Minister of Health, Dr. David Stafford-Clark, an eminent British Psychiatrist, Mrs. Elizabeth D. McCue, R.N., Nursing Consultant, of the Mental Health Division, Department of National Health and Welfare, Ottawa, and others.

Dr. Randall R. MacLean, Director of the Division of Mental Health frequently inspected the wards, and his advice was often sought and freely given.

There was an increase in the number of people who came to the hospital to visit relatives and friends.

The Canadian Mental Health Association arranged regular bus trips to the hospital, for the convenience of residents of Calgary and district, to visit their relatives and friends. This proved to be a valuable service.

THE EUGENICS BOARD

The Eugenics Board held three Meetings at the hospital. Twelve patients were presented to the Board and approved for sexual sterilization. Seven patients were sterilized.

SURGICAL SERVICES

Surgical services were provided by visiting surgeons from Edmonton, Ponoka and Red Deer. Some patients who required major surgical treatment were transferred to the Red Deer Municipal Hospital, and others to the University Hospital, Edmonton.

HOUSEKEEPING DEPARTMENT

Every possible attention was given to patient comfort. All wards were well maintained. A major project during the year was the furnishing of the new Administration-Reception Building.

FIRE PROTECTION

The Fire Department continued to operate with a high degree of efficiency, both as to personnel and equipment.

Regular fire drills were held for the staff and patients.

Inspections were carried out by members of the Fire Brigade each month.

The only fire of consequence was the loss of a root cellar in September. The cause of the fire was not ascertained.

NEW BUILDINGS AND EQUIPMENT

The new Administration-Reception building was opened in August. It was occupied first by the Business and Medical personnel.

Female patients were moved in on August 24th. The male wards were occupied later in the year.

This building has proved to be an attractive and highly functional facility, and has been named locally as "Hopewell". With the opening of "Hopewell", the former female admission unit was closed for repairs. The use of the former male admission ward was somewhat altered, and served to some extent as an overflow outlet for male patients from "Hopewell".

A considerable amount of paving was done on the hospital grounds.

BUSINESS OFFICE

Late in the year, this department was transferred to a specially designed area in the new Administration-Reception building, and this resulted in improved working conditions. The varied duties were carried out with efficiency. The Business Manager was responsible for the supervision of the ancillary departments all of which gave satisfactory service.

THE DEPARTMENT OF PUBLIC WORKS

Maintenance Department

All buildings were well maintained, and much interior and exterior painting done. Nine cottages, used as staff residences, were renovated. An entirely new telephone system was installed. This involved an internal system and external connections to the Alberta Government Telephones.

There was full co-operation between the Maintenance Department staff members and the Public Health administration in the planning and execution of the various projects.

Mechanical Branch

There was an adequate supply of heat, power and water, and every indication this department operated with a high order of efficiency.

A survey was made during the year in regard to the sewage disposal plant, and it was decided the capacity of the plant might have to be increased. This was not due to an increase in the size of the population utilizing this facility, but rather to the type of material requiring processing and as affected by the garbage disposal units.

CONCLUSION

The intake and turnover of patients continued to rise.

There was increasing use made of the hospital for the diagnosis and treatment of conditions related to social maladaptation, and not traditionally considered in the area of mental illness.

There were no startling developments in therapy during the year, but the members of the medical and nursing staff were alert to any changing concepts, and open minded as to acceptance.

Those responsible for the administration of the hospital were most grateful for the encouragement and help received from the Minister of Health, the Deputy Minister, the Director of the Division of Mental Health, and others in executive positions in the Department of Public Health.

TABLE 1
PROVINCIAL MENTAL HOSPITAL, PONOKA, ALBERTA
MOVEMENT OF PATIENT POPULATION DURING THE YEAR 1964

	M			F			T
Patients on the books December 31st, 1963	717			443			1160
ADMISSIONS:	M	F	T	M	F	T	
First Admissions:							
Voluntary	172	144	316				
Certificates	101	67	168				
Warrant	152	70	222				
				425	281	706	
Re-admissions:							
Voluntary	185	133	318				
Certificates	27	53	80				
Warrant	118	61	179				
M.D. Act	1	....	1				
				331	247	578	
Transfers in:	1			8		9	
							757 536 1293
							1474 979 2453
SEPARATIONS:							
Discharges:							
As recovered	149	137	286				
As much improved	121	153	274				
As improved	115	100	215				
As unchanged	23	12	35				
As Not Psychotic	244	87	331				
				652	489	1141	
Deaths				46	27	73	
Transfers out:				19	41	60	
							717 557 1274
Patients on the books December 31st, 1964							757 422 1179
On Leave or otherwise absent							30 49 79
In residence December 31st, 1964							727 373 1100

TABLE 2
PROVINCIAL MENTAL HOSPITAL, PONOKA, ALBERTA
PATIENT POPULATION BY PSYCHOSES—December 31st, 1964

CLASSIFICATION:	Male	Female	Total
Syphilis of C.N.S.	24	....	24
Schizophrenia	396	182	578
Manic Depressive	34	24	58
Involitional Psychosis	10	11	21
Paranoid Conditions	47	34	81
Senile Psychosis	22	27	49
Pre-senile Psychosis	2	5	7
Cerebral Arteriosclerosis	32	20	52
Alcoholic Psychosis	18	3	21
Other and Unspecified	55	26	81
Anxiety Reaction	5	1	6
Hysterical Reaction	2	1	3
Obsessive-compulsive Reaction	2	1	3
Neurotic Depressive Reaction	12	11	23
Other and Unspecified Reactions	1	5	6
Pathological Personality	12	5	17
Immature Personality	2	2	4
Alcoholism	17	1	18
Drug Addiction .....	....	1	1
Childhood Behaviour Disorders	2	1	3
Mental Deficiency	16	5	21
Other and Unspecified	3	4	7
Epilepsy	5	1	6
Mental Observation without need for Further Care	2	1	3
Other Non-psychiatric Conditions	3	1	7
TOTALS	727	373	1100

TABLE 3
PROVINCIAL MENTAL HOSPITAL, PONOKA, ALBERTA
FIRST ADMISSIONS DURING 1964 BY PSYCHOSES

CLASSIFICATION:	Male	Female	Total
Schizophrenia	70	42	112
Manic Depressive	27	8	35
Involuntional Psychosis	10	7	17
Paranoid Conditions	11	5	16
Senile Psychosis	29	17	46
Pre-senile Psychosis	2	1	3
Cerebral Arteriosclerosis	30	12	42
Alcoholic Psychosis	21	5	26
Other and Unspecified	10	19	29
Anxiety Reaction	12	8	20
Hysterical Reaction	7	....	7
Obsessive-compulsive Reaction	3	....	3
Neurotic Depressive Reaction	40	71	111
Other and Unspecified Psychoneurotic Reactions	8	24	32
Pathological Personality	26	10	36
Immature Personality	7	18	25
Alcoholism	82	12	94
Drug Addiction	1	5	6
Childhood Behaviour Disorders	3	1	4
Mental Deficiency	5	3	8
Other and Unspecified	6	8	14
Epilepsy	4	2	6
Mental Observation without need for Further Care	10	3	13
Other Non-psychiatric Conditions	1	....	1
TOTALS	425	281	706

TABLE 4
PROVINCIAL MENTAL HOSPITAL, PONOKA, ALBERTA
AGE OF FIRST ADMISSIONS DURING 1964

Age	Male	Female	Total
Under 15 years	6	2	8
15 to 19 years	25	19	44
20 to 24 years	34	31	65
25 to 29 years	45	32	77
30 to 34 years	57	38	95
35 to 39 years	53	29	82
40 to 44 years	34	29	63
45 to 49 years	42	20	62
50 to 54 years	20	17	37
55 to 59 years	25	17	42
60 to 64 years	15	8	23
65 to 69 years	12	9	21
70 to 79 years	27	20	47
80 years and over	30	10	40
TOTALS	425	281	706

TABLE 5
PROVINCIAL MENTAL HOSPITAL, PONOKA, ALBERTA
DISCHARGES BY PSYCHOSES AND CONDITION ON DISCHARGE 1964

CLASSIFICATION	Recovered		Much Improved		Improved		Unch. & Not Psy.		Totals		
	M	F	M	F	M	F	M	F	M	F	T
Schizophrenia	54	44	68	62	53	38	4	2	179	146	325
Manic Depressive	27	17	10	6	12	5	1	....	50	28	78
Involuntional Psychosis	6	4	5	13	3	2	1	....	15	19	34
Paranoid Conditions	1	....	8	9	6	7	....	2	15	18	33
Senile Psychosis .....	....	....	2	1	....	3	3	2	5	6	11
Pre-senile Psychosis .....	....	....	....	1	....	....	1	....	1	1	2
Cerebral Arteriosclerosis .....	....	....	1	1	6	2	1	2	8	5	13
Alcoholic Psychosis	25	8	2	1	1	....	....	....	28	9	37
Other and Unspecified	5	11	3	8	2	4	1	1	11	24	35
Anxiety Reaction	2	2	8	6	11	3	3	....	24	11	35
Hysterical Reaction	1	....	1	1	3	....	3	....	8	1	9
Obsessive-compulsive	2	....	1	3	....	....	....	....	3	3	6
Neurotic Depressive	26	46	8	19	11	26	2	3	47	94	141
Other and Unspecified Reactions .....	....	5	4	22	7	10	3	....	14	37	51
Pathological Personality .....	....	....	....	....	....	....	61	19	61	19	80
Immature Personality .....	....	....	....	....	....	....	11	22	11	22	33
Alcoholism .....	....	....	....	....	....	....	134	20	134	20	154
Drug Addiction .....	....	....	....	....	....	....	2	7	2	7	9
Childhood Behaviour Disorders .....	....	....	....	....	....	....	8	....	8	....	8
Mental Deficiency .....	....	....	....	....	....	....	2	4	2	4	6
Other and Unspecified .....	....	....	....	....	....	....	5	8	5	8	13
Epilepsy .....	....	....	....	....	....	....	4	3	4	3	7
Mental Observation without need for Further Care .....	....	....	....	....	....	....	16	4	16	4	20
Other Non-psychiatric Conditions .....	....	....	....	....	....	....	1	....	1	....	1
TOTALS	149	137	121	153	115	100	267	99	652	489	1141

TABLE 6
PROVINCIAL MENTAL HOSPITAL—PONOKA, ALBERTA
DISCHARGES BY PSYCHOSES AND DURATION OF RESIDENCE

CLASSIFICATION	Under 3 months		Under 6 months		Under 1 year		Over 1 year		Totals		
	M	F	M	F	M	F	M	F	M	F	T
Schizophrenia	109	88	33	18	16	23	21	17	179	146	325
Manic Depressive	39	27	8	1	1	....	2	....	50	28	78
Involitional Psychosis	13	12	2	2	....	3	....	2	15	19	34
Paranoid Conditions	8	8	3	5	2	4	2	1	15	18	33
Senile Psychosis	4	3	....	1	....	1	1	1	5	6	11
Pre-senile Psychosis .....	....	....	1	....	....	....	....	1	1	1	2
Cerebral Arteriosclerosis	6	1	....	3	1	1	1	....	8	5	13
Alcoholic Psychosis	23	6	2	2	2	1	1	....	28	9	37
Other and Unspecified	5	20	3	1	2	1	1	2	11	24	35
Anxiety Reaction	19	9	4	1	1	....	....	1	24	11	35
Hysterical Reaction	6	....	2	....	....	1	....	....	8	1	9
Obsessive-compulsive	3	3	....	....	....	....	....	....	3	3	6
Neurotic Depressive Reaction	43	77	3	12	1	3	....	2	47	94	141
Other and Unspecified Reactions	14	32	....	3	....	2	....	....	14	37	51
Pathological Personality	58	16	3	2	....	1	....	....	61	19	80
Immature Personality	9	19	2	3	....	....	....	....	11	22	33
Alcoholism	124	19	6	1	2	....	2	....	134	20	154
Drug Addiction	1	7	....	....	1	....	....	....	2	7	9
Childhood Behaviour Disorders	7	....	....	....	1	....	....	....	8	....	8
Mental Deficiency	1	2	1	1	....	....	....	1	2	4	6
Other and Unspecified	5	7	....	....	....	1	....	....	5	8	13
Epilepsy	2	2	1	1	....	....	1	....	4	3	7
Mental Observation without need for Further Care	13	4	2	....	1	....	....	....	16	4	20
Other Non-psychiatric Conditions .....	....	....	1	....	....	....	....	....	1	....	1
TOTALS	512	362	77	57	31	42	32	28	652	489	1141

TABLE 7
PROVINCIAL MENTAL HOSPITAL, PONOKA, ALBERTA
CAUSES OF DEATH DURING 1964

CLASSIFICATION	Male	Female	Total
Malignant Neoplasms	2	....	2
Benign and Unspecified Neoplasms	1	1	2
Vascular Lesions Affecting C.N.S.	2	3	5
Arteriosclerotic and Degenerative Heart Disease	6	7	13
Other Diseases of the Heart	4	2	6
Pneumonia	22	10	32
Nephritis and Nephrosis	2	1	3
Senility	1	....	1
All Other Diseases	6	3	9
TOTALS	46	27	73

TABLE 8
PROVINCIAL MENTAL HOSPITAL, PONOKA, ALBERTA
DEATHS BY PSYCHOSES

	Male	Female	Total
Schizophrenia	4	1	5
Manic Depressive	3	2	5
Paranoid Conditions .....	....	2	2
Senile Psychosis	10	10	20
Pre-senile Psychosis	1	1	2
Cerebral Arteriosclerosis	19	6	25
Alcoholic Psychosis	1	....	1
Other and Unspecified Psychoses	5	5	10
Hysterical Reaction	1	....	1
Mental Deficiency	1	....	1
Epilepsy	1	....	1
TOTALS	46	27	73

PROVINCIAL MENTAL INSTITUTE, EDMONTON, ALBERTA

A. D. MacPherson, M.D., R.C.P.S.(C.), Medical Superintendent

PATIENT POPULATION CHANGES

On December 31, 1963, there were in residence 979 men and 462 women patients, a total of 1,441. The number in residence December 31, 1964 was 944 men and 465 women, a total of 1,409. However, there were 155 patients on leave or otherwise absent (compared to 130 on leave or otherwise absent in 1963). The total patient population in residence, and on leave or otherwise absent, on December 31, 1964 was 1,564. This was an increase of 123 over the previous year.

ADMISSION OF PATIENTS

During the year, 920 men and 642 women were admitted, for a total of 1,562. In addition, six men and 12 women were transferred from different mental institutions in the Province, making a total of 926 men and 654 women admitted. A combined total of 1,580 was admitted during the year. This was an increase of 37 from the previous year. Admissions by Voluntary application were 749, by Medical Certificates 387, by Warrant 422 (including 224 on Remand), and under The Mental Defectives Act there were four. Two hundred and nineteen were in the Geriatric group. Eight admissions were under The Tuberculosis Act.

SEPARATION OF PATIENTS

During the year, 790 men and 544 women, a total of 1,334 was discharged. This was an increase of 89 over the previous year. In addition, 73 men and 70 women, a total of 143 was transferred to other mental institutions. There were 118 deaths, at least 101 being associated with degenerative changes due to old age, during the year. There were 44 autopsies performed. The total number of separations during the year was 1,595. During the year, more than 4,360 patients were out on leave for periods longer than 24 hours.

GENERAL HEALTH

This was good during the year. There were no epidemics. T.A.B.T. Immunization was carried out on all admissions and new staff. Chest X-Rays were done on all new staff, plus a complete re-survey of all patients and staff.

CLINICAL WORK

The Clinical Work during 1964 was very heavy because of the high admission rate. All acceptable forms of treatment were in use. Tranquillizers and anti-depressant drugs were used extensively. All new preparations of the above group were given control trials. Emphasis was placed on Group Psychotherapy, and Individual Psychotherapy when indicated. The Electro-Convulsive Therapy continued to be used on depressed and some disturbed patients.

Emphasis was placed on finding employment, in Edmonton, for patients, allowing them to go to work during the day and spend the night at the hospital. This worked out very well.

Occupational Therapy continued to expand.

In addition to taking care of the psychiatric problems of the patients, the Medical Staff continued to provide treatment for the patients' physical illnesses. Specialists were called in from Edmonton as needed, particularly from the University Hospital.

Special mention must be made of the T.B. work. All patients infected with tuberculosis from the Division of Mental Health were treated at this hospital. The anti-tuberculosis work was very successful. In addition, we admitted patients, on sentence under The Tuberculosis Act, who were a source of infection and who refused adequate treatment.

Continued use was made of the Cancer Clinic for diagnosis and treatment. A number of patients were transferred from the Provincial Mental Hospital, Ponoka, Rosehaven, Camrose and Deerhome, Red Deer for attendance at the Cancer Clinic and for continued treatment.

Rehabilitation continued to be handled quite easily. Actually it never has been a problem here. We were given very extensive help by the various agencies in Edmonton that were operating in this field.

The Open-door Policy remained active at a high level. In addition, a very high percentage of patients had out-door privileges and moved freely about the grounds.

The Out-Patient Service continued at its customary high level. Actually, this was very extensive. For example, one admission ward alone saw 135 patients, for a total of 530 interviews. This was an excellent service and it has been working well for some years. It dealt with a very considerable number of patients. It involved a large amount of extra work for the Medical Staff, but was, in our opinion, justifiable. The above figure does not include those seen by the social workers.

The Alcoholic Program continued to be very active. Close co-operation was maintained with the Alcoholism Foundation and Alcoholics Anonymous. Most of the referrals came from the above mentioned two sources, but many patients also came in from private physicians and other sources. Discharged patients were returned to the referring organization. The Program consisted of group recreation, and occupational therapy, and, when necessary, physical therapy. Although, an active program was designed to treat each patient individually, group therapy was used as much as possible. In addition, families were brought into the program through the assistance of Al-Anon. The Al-Anon group held weekly sessions throughout the year. The total attendance at the meetings was 1,098.

OCCUPATIONAL THERAPY

As mentioned previously, Occupational Therapy played a very important part in the treatment program. One extra well-qualified Occupational Therapist joined the staff during the year. Therapy was carried out on all the wards as well as in the centre. Teas and exhibitions of the work were put on for the public at intervals during the year. Also, arrangements were made through the courtesy of the Museum of Arts to obtain loans of pictures. These were hung in the Occupational Therapy Department. This was very much appreciated. Also added was a graphic set of posters depicting aims and objectives of occupational therapy work. This was on display for patients and visitors.

SOCIAL SERVICES

The work of this Department continued to increase. The calibre of the staff was excellent. It included the investigation of family backgrounds, interviewing relatives, rehabilitation of discharged patients, and public relations. There were 4,700 interviews done during the year.

In addition, the program for the use of foster homes was greatly expanded with the assistance of the Department of Public Welfare and the City Welfare Department. The patients were released to the care of foster homes where welfare support was provided and the Social Service Department carried out the follow-up program. Some of these patients were able to work either full or part-time and some were not. At the present time, this increased program is in the developing stage. Invaluable help was provided by the Canadian Mental Health Association in finding and screening foster homes.

PSYCHOLOGIST

As far as possible, all new patients and especially all remand cases, were given a battery of psychological tests. This work was invaluable in planning the treatment program. In addition, the psychologists carried on group therapy programs. They also gave courses to the psychiatric and affiliation nursing students. The Chief Psychologist was very active in public relations. He took part in seminars, and gave lectures and talks to various interested organizations in Edmonton.

RECREATIONAL PROGRAM

The full-time program was continued. This covered all wards and forms of recreational activity. The Department of Veterans' Affairs continued to assist in providing shows, tickets to football and hockey games, etc. During the year, seasonal sports were followed extensively with a large number of patients taking part. The Recreational Program was very comprehensive and successful. The Women's Auxiliary of the Royal Canadian Legion assisted by putting on several shows and concerts.

RELIGIOUS SERVICES

The Lutheran Minister continued to be very helpful. He held services every Sunday and brought out visiting groups. The Roman Catholic services were held every Sunday. Anglican and United Church services were held alternating Sundays. The Jewish and Ukrainian women's organizations visited regularly and provided religious services during their visits.

LIBRARY

This Department remained very active during the year. It was open daily. During the year, the patients were fortunate in receiving a very large number of donations of magazines for the library. The Royal Canadian Legion donated a large number of books during the year.

BEAUTY PARLOR

This Department remained very active. The number of patients receiving treatment here continued to increase constantly.

DENTAL SERVICES

All patients were examined regularly during the year and, where required, treatment was carried out. All new admissions were also examined and treated. Various types of treatments carried out amounted to 2,540. In addition, the dentist supplied services to Rosehaven, Camrose, and held Clinics for students of the University of Alberta.

X-RAY SERVICES

During the year 6,252 examinations were done. In addition, B.C.G. vaccinations, and tuberculin tests of new staff and patients were done by this Department. They also assisted in the training program of X-Ray technicians carried out by the Department of Health. A complete chest survey of all patients and staff is done every year or more often if required.

LABORATORY SERVICES

During the year, over 22,014 examinations were done. This Department also assisted in the training program given to technicians from the school operated by the Department of Health. In addition, follow-up laboratory work was done at intervals on a total of 474 out-patients.

SURGICAL SERVICES

During the year, there were 50 major operations, 27 minor operations, three deliveries, 52 other procedures, and eight applications of casts. Some of the surgical work was done by staff and on other occasions consultants were called in. The results were excellent.

ELECTROENCEPHALOGRAPH

Over 497 E.E.G.'s were done during the past year at this hospital, plus 193 E.C.G.'s and 12 B.M.R.'s. In addition, 200 E.E.G.'s were done at the Provincial Mental Hospital, Ponoka. It is quite obvious that this Department was very active during the year.

EUGENICS BOARD

The Eugenics Board held four meetings at this hospital during the year. A total of 30 cases was presented to the Board. Nine of these were from the Provincial Guidance Clinic. A total of 11 operations were performed.

SCHOOL OF NURSING

During the past year discussion and planning regarding changes occurring in the pattern of nursing education and services continued. This was in line with the thinking throughout the country. This involved a lot of the time of senior Administrative Nursing Personnel.

During the year, 26 women and three men, a total of 29 students completed the three-year course in Psychiatric Nursing. At the end of the year, there were 82 students, divided as follows: 41 first year students, 24 second year students, and 17 third year students. The affiliation program for student nurses from general hospitals was continued. A total of 303 students were given an eight-week course in Psychiatric Nursing throughout the year. The average number of students in at-

tendance on each course was 50. These affiliation students came from the Edmonton General Hospital, Misericordia Hospital, Royal Alexandra Hospital, all of Edmonton, St. Joseph's General Hospital, Vegreville, and the Archer Memorial Hospital, Lamont. In addition, 11 graduate nurses enrolled in the Diploma Course in Public Health Nursing at the University of Alberta, spent two weeks at the Provincial Mental Institute, Edmonton, for field experience. In-service training, consisting of ward teaching and lectures, was continued for all staff.

A new program was initiated in the Fall. Affiliation arrangements were made with St. Michael's Hospital, Lethbridge, to take our psychiatric graduates and give them a 16 month training period, which would make them eligible to write the R.N.'s; thus giving them a combined training, which it is anticipated will make them very valuable members of the profession. The first two candidates started at St. Michael's Hospital in September.

NURSING SERVICE

The Nursing Service operated very efficiently during the year. The program of team nursing was expanded to include all the female and some of the male wards. The senior ward staff assisted with and carried on group therapy programs. Remotivation work was carried on in all wards. In-service education was continued throughout the year.

FIRE PROTECTION

Regular fire practices were held throughout the year. Instructions were given throughout the hospital to all new staff. The fire equipment was inspected and was kept at a peak of efficiency. No fires occurred during the year.

HOUSEKEEPING

This Department continued to function efficiently. The wards were kept comfortable and attractive.

LAUNDRY

The laundry was very busy, due to the very heavy patient load. The work was done very efficiently. A total of over 2,000,000 pounds of laundry was done.

TAILOR AND SEWING SHOP

Both Departments were very busy. Work consisted mostly of repairs and was very well done, which resulted in a very considerable saving of the clothing.

DIETARY DEPARTMENT

The Dietary Department continued to function very well. In addition to the large number of ordinary meals to staff, an average daily population amounting to around 2,000, there was also a large number of special diets required.

FORENSIC MEDICINE

This service continued to be very busy. A total of 224 cases were admitted on remand. Members of the Medical Staff appeared in Court on numerous occasions in connection with this work. Although this service involved a considerable amount of time, it was felt the results

were justified. In addition to this, the work at the Fort Saskatchewan Gaol increased markedly. A considerable number of prisoners, either awaiting trial or serving sentences, were examined at the jail. This is another department of which people, generally, are not aware.

BUSINESS OFFICE

This Department was very active. The work continued to expand. Further up-to-date equipment was added. The work of this Department was very heavy during the past year.

MEDICAL RECORDS

Due to the large number of admissions and discharges, the work of this Department was greatly increased and was carried out very efficiently. An additional burden was added by the preliminary work necessitated by the expected introduction of the new Mental Health Act.

GARDENS AND GROUNDS

The garden crop was very good and the yield was high. The quality of vegetables was also very good. The production was sufficient to supply the hospital needs throughout the year and there was a vegetable surplus.

VISITING AND VOLUNTEER PROGRAMS

During the year, the Canadian Mental Health Association continued to develop its visiting program and to assist in other activities, such as the White Cross Centre, the Christmas Bazaar, and the Fashion Show, etc. The United Church Program continued to expand. The Lutheran Women's Auxiliary, the Ukrainian Ladies, the Jewish Ladies, and the Chinese Benevolent Association all visited at regular intervals. These visiting programs included all wards and came at regular and frequent intervals. In addition, the Mormon Church had a visiting program during the year. The Womens' Auxiliary of the Royal Canadian Legion began a visiting program to the continued treatment male wards. This program was very successful. The Nursing Administration instituted a program of orientation seminars to the visitors. These seminars were well received and it was felt that they were very helpful. A total of 250 attended these seminars. In addition to the above regular visitors, various community organizations visited and/or supplied recreational programs. On the average, during the past year, there were 32 visiting groups per month. (This gives some idea of the extent of the visiting program.) Some of these groups brought lunches for the patients, and other times, the patients themselves prepared lunches through the ward cooking program for the visitors.

A new Open-House Program was added during this year. In addition to the ordinary visiting days arranged by each ward when friends and relatives could come and visit and have tea, a different type of program was adopted. Written invitations were sent to all friends and relatives. The wards were thrown open from 2:00 p.m. to 8:00 p.m. Visitors were free to wander around and inspect all parts of the ward and equipment and lunch was served. Patients and staff took part in conducting the visitors around, serving the lunch, etc. The average attendance on each ward was over 200. The results were very favorable.

The Canadian Mental Health Association held a Christmas Bazaar during the Christmas Season. They supplied gifts for patients to send to their families and relatives. The attendance at the bazaar was over 600 patients. During the year, members of the volunteer groups carried out a program of taking groups of patients out to visit various homes throughout the City. This was done two to three times a month.

The Lloydminster Branch of the Canadian Mental Health Association has for several years now been carrying on a very unusual type of program. They supplied money to buy birthday presents for patients without relatives, especially those who have been in hospital for some time. Birthday parties were held monthly for all those whose birthdays fell during each month.

During the Christmas and New Year's Season, Leave of Absence, for eight hours or longer, was given to over 400 patients to visit their homes and relatives. In addition, 375 patients were taken on sight-seeing tours of the Christmas decorations throughout the City.

The Summer Camp Program of the Canadian Mental Health Association was very successful. This camp was held during the months of July and August. Four groups, a total of 80 patients, attended camp during this period for a period of one week for each group. In addition, visiting parties, for one day, were arranged during each of the four camp periods. Approximately 300 patients made these one-day visits.

VISITORS

The Honorable Dr. J. Donovan Ross, Minister of Health visited regularly; and Dr. Randall R. MacLean, Director of the Division of Mental Health, was a frequent visitor. In addition, Dr. Stafford Clark from England visited during one afternoon under the auspices of the Canadian Mental Health Association.

PUBLIC WORKS

Maintenance Department: Number three buildings, which was renovated, was completed, furnished and occupied during the year. It is used by one of the male admission services.

Mechanical Branch: The operation of this branch was very efficient during the year.

ADMISSION PROCEDURES

The new procedure of having Magistrate C. Rolf hold a Court here in connection with The Mental Diseases Act continued to work successfully. With the anticipated introduction of the new Mental Health Act to be effective January 1, 1965, a survey of the admission procedures of all patients in hospital was completed and the necessary changes were initiated.

CONCLUSION

The admission rate was slightly increased over last year, but is showing signs of leveling off. The present practices — foster home and rehabilitation programs — all resulted in shortening the stay of patients in hospital. Community interest and participation in hospital activities continued and was most helpful.

In conclusion, we would like to express our appreciation to the Honorable Dr. J. Donovan Ross, and Dr. Randall R. MacLean, for their sympathetic understanding and help at all times.

TABLE 1
PROVINCIAL MENTAL INSTITUTE, EDMONTON, ALBERTA
MOVEMENT OF PATIENT POPULATION DURING 1964

	M	F	T	M	F	T
Total on books December 31, 1963				1043	536	1579
On Leave or otherwise absent				64	74	138
Total in residence December 31, 1963				979	462	1441
ADMISSIONS:						
First Admissions:						
(a) Voluntary	202	105	307			
(b) Medical Certificates	156	124	280			
(c) Warrants	172	65	237			
(d) Mental Defectives Act	1	2	3			
TOTAL	531	296	827			
Readmissions:						
(a) Voluntary	233	209	442			
(b) Medical Certificates	39	68	107			
(c) Warrants	117	68	185			
(d) Mental Defectives Act	0	1	1			
TOTAL	389	346	735			
Transfers In:	6	12	18			
TOTAL ADMISSIONS	926	654	1580			
SEPARATIONS:						
Discharges	790	544	1334			
Transfers	73	70	143			
Deaths	90	28	118			
TOTAL SEPARATIONS	953	642	1595			
Total on books December 31, 1964				1016	548	1564
On Leave or otherwise absent				72	83	155
Total in residence December 31, 1964				944	465	1409

Table 2
PROVINCIAL MENTAL INSTITUTE, EDMONTON, ALBERTA
PSYCHOSES OF PATIENT POPULATION—DECEMBER 31, 1964

	Male	Female	Total
Schizophrenic Disorders	642	244	886
Manic—Depressive Reaction	36	37	73
Involuntional Melancholia	11	30	41
Paranoia and Paranoid States	32	11	43
Senile Psychosis	38	61	99
Presenile Psychosis	9	7	16
Psychosis with Cerebral Arteriosclerosis	42	42	84
Alcoholic Psychosis	11	3	14
Psychosis of Other Demonstrable Etiology	39	15	54
Other and Unspecified Psychoses	17	14	31
Anxiety Reaction	0	3	3
Hysterical Reaction	0	2	2
Obsessive—Compulsive Reaction	0	1	1
Neurotic—Depressive Reaction	9	14	23
Psychoneurotic Disorders, Other, Mixed and Unspecified Types	4	9	13
Pathological Personality	30	6	36
Immature Personality	1	4	5
Alcoholism	12	11	23
Drug Addiction	1	3	4
Primary Childhood Behavior Disorders	6	1	7
Mental Deficiency	39	20	59
Other and Unspecified Character, Behavior and Intelligence Disorders	4	0	4
Juvenile Neurosyphilis	1	0	1
General Paralysis of Insane	15	0	15
Late Effects of Acute Infectious Encephalitis	0	1	1
Epilepsy	11	4	15
Puerperal Psychosis	0	2	2
Other Diseases of Brain	2	0	2
Observation Without Need for Further Medical (Psychiatric) Care	4	3	7
TOTAL	1016	548	1564

TABLE 3
PROVINCIAL MENTAL INSTITUTE, EDMONTON, ALBERTA
PSYCHOSES BY FIRST ADMISSION—1964

	Male	Female	Total
Schizophrenic	69	52	121
Manic-Depressive Reaction	8	10	18
Involitional Melancholia	8	15	23
Paranoia and Paranoid States	8	5	13
Senile Psychosis	67	50	117
Presenile Psychosis	4	....	4
Psychosis with Cerebral Arteriosclerosis	42	18	60
Alcoholic Psychosis	14	....	14
Psychosis of Other Demonstrable Etiology	7	3	10
Other and Unspecified Psychoses	7	5	12
Anxiety Reaction Without Mention of Somatic Symptoms	2	6	8
Hysterical Reaction Without Mention of Anxiety Reaction	2	5	7
Obsessive—Compulsive Reaction .....	....	1	1
Neurotic—Depressive Reaction	25	20	45
Psychoneurotic Disorders, Other, Mixed, and Unspecified Types	5	5	10
Pathological Personality	58	19	77
Immature Personality	10	8	18
Alcoholism	128	18	146
Other Drug Addiction	1	1	2
Primary Childhood Behavior Disorders	8	10	18
Mental Deficiency	8	10	18
Other and Unspecified Character, Behavior and Intelligence Disorders	8	10	18
Paralysis Agitans	1	....	1
Epilepsy	3	....	3
Puerperal Psychosis .....	....	10	10
Other Diseases of Brain	2	....	2
Nervous and Debility	1	2	3
Observation without Need for Further Medical (Psychiatric) Care	35	13	48
TOTAL	531	296	827

TABLE 4
PROVINCIAL MENTAL INSTITUTE, EDMONTON, ALBERTA
AGES OF PATIENTS ADMITTED DURING 1964

Ages	First Admission			Readmissions			Transfers			Total		
	M	F	T	M	F	T	M	F	T	M	F	T
Under 15 years	4	8	12	....	4	4	....	....	....	4	12	16
15 to 19 years	36	34	70	23	13	36	....	....	....	59	47	106
20 to 24 years	43	28	71	33	31	64	....	1	1	76	60	136
25 to 29 years	43	26	69	29	41	70	1	1	2	73	68	141
30 to 34 years	50	26	76	56	49	105	....	....	....	106	75	181
35 to 39 years	56	26	82	72	38	110	....	....	....	128	64	192
40 to 44 years	65	19	84	59	51	110	....	2	2	124	72	196
45 to 49 years	43	18	61	34	30	64	1	1	2	78	49	127
50 to 54 years	34	22	56	30	34	64	....	....	....	64	56	120
55 to 59 years	26	11	37	18	19	37	....	1	1	44	31	75
60 to 64 years	24	12	36	16	15	31	1	2	3	41	29	70
65 to 69 years	10	5	15	4	7	11	2	2	4	16	14	30
70 and over	97	61	158	15	14	29	1	2	3	113	77	190
Total	531	296	827	389	346	735	6	12	18	926	654	1580

TABLE 5
PROVINCIAL MENTAL INSTITUTE, EDMONTON, ALBERTA
DISCHARGES CLASSIFIED WITH REFERENCE TO PRINCIPAL PSYCHOSES AND CONDITIONS FOR 1964

PSYCHOSES	Recovered			Improved			Much Improved			Unimproved			Unchanged			Total		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Schizophrenic Disorders	186	175	361	...	...	...	5	5	10	2	...	2	...	...	...	193	180	373
Manic-Depressive Disorders	23	43	66	...	...	...	...	...	...	...	...	...	...	...	...	23	43	66
Involuntal Melancholia	12	52	64	...	...	...	...	1	1	3	...	...	...	...	...	13	52	65
Paranoia and Paranoid States	11	3	14	...	...	...	2	2	4	9	1	1	...	...	...	13	4	17
Senile Psychosis	...	...	...	6	4	10	5	4	9	1	...	...	...	1	1	12	9	21
Presenile Psychosis	...	...	...	3	...	3	...	...	...	...	...	...	...	...	...	3	...	3
Psychosis with Cerebral Arteriosclerosis	...	...	...	5	7	12	4	1	5	...	...	...	1	...	1	10	8	18
Alcoholic Psychosis	20	1	21	...	...	...	...	...	...	...	...	...	...	...	...	20	1	21
Psychosis of Other Demonstrable Etiology	8	5	13	1	...	1	7	2	9	...	...	...	...	...	...	16	7	23
Other and Unspecified Psychoses	14	3	17	...	...	...	1	1	2	...	...	...	...	...	...	15	4	19
Anxiety Reaction	8	9	17	...	...	...	...	...	...	...	...	...	...	...	...	8	9	17
Hysterical Reaction	3	6	9	...	...	...	1	1	2	...	...	...	...	...	...	4	7	11
Obsessive-Compulsive Reaction	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Neurotic-Depressive Reaction	32	38	70	1	...	1	...	...	...	...	...	...	...	...	...	33	38	71
Psychoneurotic Disorders, Etc.	11	13	24	...	...	...	...	...	...	...	...	...	...	...	...	11	13	24
Pathological Personality	16	4	20	36	9	45	37	13	50	...	...	...	8	8	16	97	34	131
Immature Personality	1	4	5	6	5	11	9	4	13	...	...	...	1	1	2	17	14	31
Alcoholism	15	5	20	93	22	115	117	11	128	...	...	...	2	...	2	227	38	265
Drug Addiction	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Primary Childhood Behavior Disorders	6	3	9	3	6	9	4	5	9	...	...	...	...	1	1	13	15	28
Mental Deficiency	...	...	...	2	2	2	...	1	1	...	...	...	9	11	20	11	12	23
Other and Unspecified Character, Behavior and Intelligence Disorders	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Syphilis of Central Nervous System	3	9	12	1	5	6	5	3	8	...	...	...	...	...	...	9	17	26
Paralysis Agitans	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	1	1	1
Epilepsy	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Puerperal Psychosis	3	1	4	...	2	2	3	4	7	...	...	...	...	...	...	6	7	13
Other Diseases of Brain	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14	14
Nervousness and Debility	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Observation without Need for Further Medical (Psychiatric) Care	1	3	4	...	...	...	...	...	...	...	...	...	...	...	...	1	3	4
	3	2	5	1	1	2	...	...	...	...	...	...	30	10	40	34	13	47
TOTAL	377	394	771	158	61	219	201	57	258	3	...	3	51	32	83	790	544	1334

TABLE 6
PROVINCIAL MENTAL INSTITUTE, EDMONTON, ALBERTA
DISCHARGES DURING 1964 SHOWING DURATION OF RESIDENCE IN HOSPITAL

PSYCHOSES	Under 3 mths.			Under 6 mths.			Under 9 mths.			Under 12 mths.			Under 18 mths.			Under 2 years			Over 2 years			TOTAL		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Schizophrenic Disorders	86	71	157	41	59	100	33	21	54	8	9	17	8	7	15	5	4	9	12	9	21	193	180	373
Manic-Depressive Reaction	14	25	39	4	13	17	3	5	8	1	1	1	1	1	1	1	1	1	1	2	3	23	43	66
Involutional Melancholia	4	27	31	8	19	27	2	2	2	1	1	1	1	1	1	1	1	1	2	1	3	13	52	65
Paranoia and Paranoid States	2	3	5	6	1	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	9	21
Senile Psychosis	9	2	11	1	4	5	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	3	10	13
Presenile Psychosis	2	2	2	3	2	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	8	18
Psychosis with Cerebral Arteriosclerosis	12	1	13	4	4	4	1	2	3	1	1	2	1	1	1	1	1	1	1	1	1	20	7	23
Alcoholic Psychosis	8	4	12	1	2	3	1	1	1	1	3	1	1	1	1	1	1	1	3	1	3	16	7	23
Psychosis of Other Demonstrable Etiology	9	2	11	4	2	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	4	19
Other and Unspecified Psychoses	3	7	10	2	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	8	9	17
Anxiety Reaction	3	4	8	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	7	11	1
Hysterical Reaction	30	27	57	1	7	8	1	3	4	1	1	2	1	2	2	1	1	1	1	1	1	33	38	71
Obsessive—Compulsive Reaction	9	9	18	1	1	1	1	1	2	2	2	2	2	2	2	1	1	1	1	1	11	13	24	1
Neurotic—Depressive Reaction	85	29	114	7	4	11	3	1	3	1	1	2	1	1	1	1	1	1	1	1	97	34	131	
Psychoneurotic Disorders, etc.	16	13	29	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	17	14	31	
Pathological Personality	219	37	256	3	1	4	3	1	3	2	2	2	2	2	2	2	2	2	2	2	227	38	265	
Immature Personality	12	14	26	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	13	15	28	
Alcoholism	6	7	13	2	3	5	1	1	2	1	1	1	1	1	1	1	1	1	1	1	9	17	23	
Primary Childhood Behavior Disorders	6	10	16	1	6	7	2	1	3	1	1	1	1	1	1	1	1	1	1	1	9	17	26	
Mental Deficiency	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Other and Unspecified Disorders	1	3	4	4	2	6	1	1	2	1	1	1	1	1	1	1	1	1	1	1	6	7	13	
Other Syphilis of C.N.S.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Paralysis Agitans	1	3	4	4	2	6	1	1	2	1	1	1	1	1	1	1	1	1	1	1	6	7	13	
Epilepsy	1	6	6	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Puerperal Psychosis	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Nervousness and Debility	34	13	47	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	34	13	47	
Observation without Need for Further Medical Care	576	319	895	93	138	231	55	42	97	22	16	38	12	11	23	8	4	12	24	14	38	790	544	1334
TOTAL	576	319	895	93	138	231	55	42	97	22	16	38	12	11	23	8	4	12	24	14	38	790	544	1334

TABLE 7
 PROVINCIAL MENTAL INSTITUTE, EDMONTON, ALBERTA
 DEATHS DURING 1964 BY ABRIDGED INTERNATIONAL CLASSIFICATION

	Male	Female	Total
Syphilis and its Sequelae	1	....	1
All Other Diseases Classified as Infective and Parasitic	3	1	4
Malignant Neoplasms, including Neoplasms of Lymphatic and Haematopoietic Tissues	3	1	4
Vascular Lesions Affecting Central Nervous System	6	4	10
Chronic Rheumatic Heart Disease	2	....	2
Arteriosclerotic and Degenerative Heart Disease	33	11	44
Pneumonia	28	7	35
Senility Without Mention of Psychosis, Ill-defined and Cause Unknown	6	....	6
All Other Diseases	8	4	12
TOTAL	90	28	118

TABLE 8
 PROVINCIAL MENTAL INSTITUTE, EDMONTON, ALBERTA
 DEATHS DURING 1964 BY PSYCHOSES

	Male	Female	Total
Schizophrenic Disorders	15	3	18
Manic-Depressive Reaction	2	....	2
Involucional Melancholia	2	1	3
Paranoia and Paranoid States	1	....	1
Senile Psychosis	30	11	41
Presenile Psychosis	4	1	5
Psychosis with Cerebral Arteriosclerosis	22	10	32
Alcoholic Psychosis	2	....	2
Psychosis of Other Demonstrable Etiology	2	....	2
Neurotic-Depressive Reaction	1	....	1
Alcoholism	1	....	1
Primary Childhood Behavior Disorders	1	....	1
Other and Unspecified Character, Behavior and Intelligence Disorders .....	....	1	1
General Paralysis of Insane	5	1	6
Epilepsy	1	....	1
Observation without Need for Further Medical (Psychiatric) Care	1	....	1
TOTAL	90	28	118

CHRONIC HOSPITALS

PROVINCIAL MENTAL HOSPITAL, CLARESHOLM

PROVINCIAL AUXILIARY MENTAL HOSPITAL, RAYMOND

ROSEHAVEN, CAMROSE

The patient population of the Provincial Mental Hospital, Claresholm, rose to 231 at the end of the year. Twenty-eight female patients were received by transfer during the year from the Provincial Mental Hospital, Ponoka. Twenty-nine female patients were received from the Provincial Mental Institute, Edmonton.

The Provincial Auxiliary Mental Hospital, Raymond, cared for approximately 116 patients.

Rosehaven, Camrose, cared for a mixed population of male and female patients to the number of 500. There was further decline in the general health of the patients as a result of aging processes. One hundred and twenty-three deaths occurred during the year, which was a decrease of 16 over the previous year. Twenty patients were received from the Provincial Mental Hospital, Ponoka, by transfer, and one hundred and five patients were received from the Provincial Mental Institute, Edmonton. Certain patients were granted leave-of-absence from time to time.

PROVINCIAL MENTAL HOSPITAL, CLARESHOLM

**R. R. MacLean, M.D., Cert. in Neurol. and Psychiatry,
F.A.P.A., Cert. N.H.A. (A.P.A.)**

MOVEMENT OF PATIENTS

On January 1, 1964, there were 196 patients in residence and 231 patients in residence December 31, 1964.

Fifty-seven patients were transferred to this hospital from the following hospitals: twenty-eight from the Provincial Mental Hospital, Ponoka, twenty-five from the Provincial Mental Institute, Edmonton, one from the Calgary General Hospital, Calgary, and three returned from the Municipal Hospital, Claresholm.

One patient was admitted by Medical Certificates.

One patient was discharged to the care of relatives.

There were thirteen patients transferred to the following: five to the Provincial Mental Hospital, Ponoka, four to the Provincial Mental Institute, Edmonton, one to the Calgary General Hospital, Calgary, and three to the Municipal Hospital, Claresholm.

There were six deaths during the year.

NEW BUILDINGS

The original building, the old Agricultural College, was demolished and construction of a New Administration Building was started on that site.

ACCIDENTS AND ELOPEMENTS

There were no elopements and no serious accidents.

GENERAL HEALTH

The general health of the patients was good. The increasing number of geriatric patients required almost total care.

Emergency X-Ray and Laboratory tests were done at the Claresholm Municipal Hospital.

Two of the local physicians visited the hospital and took emergency calls.

OCCUPATIONAL DEPARTMENT

The Occupational Department continued its good work, and articles were sold locally. A choral group, among the patients, was formed, under the guidance of the Occupational Therapy Department staff.

Group activities were continued and expanded on the wards and many of the regressed patients responded favourably.

A volunteer worker conducted classes in exercises and simple dances. This was enjoyed by many of the patients.

During the summer months a group of patients went to the garden under the supervision of ward staff. All wards had a regular schedule for walks and lawn parties.

RECREATIONAL ACTIVITIES

There were several parties held during the year. The patients were encouraged to take part in the program. Birthday parties were held each month for the patients. Volunteer groups held music appreciation and rhythm band classes. The wards entertained each other.

Organizations from Claresholm and Staveland entertained the patients after their Callow Coach rides during the summer.

The High School students and United Church Choir entertained the patients at Christmas and Easter.

The patients and staff held a very successful tea to thank the representatives from the various organizations who had entertained the ladies during the year. Several groups of visitors were shown through the various departments.

BEAUTY PARLOUR

The patients had their hair done regularly by the staff. The additional hair dryers and sinks added much to this project.

RELIGIOUS SERVICES

Religious services were conducted every Sunday and Roman Catholic Church was held once each month.

DENTISTRY

The Dentist from the Provincial Mental Hospital, Ponoka, visited the Hospital in September and gave the necessary dental care. Emergency dental work was done by the local dentist.

BUILDINGS

The maintenance staff made the necessary repairs to the building and equipment.

GARDENS AND GROUNDS

There was a good crop of vegetables except for one field of early vegetables which was flooded out.

STAFF

It was necessary to augment the staff due to the increase in patients, and the increased number of aging patients who required total care. The younger regressed patients also required more supervision and organized activities.

VISITORS

Dr. R. R. MacLean, Director, Division of Mental Health, visited the hospital several times, and his help and advice were greatly appreciated.

Relatives and friends visited the patients during the year.

TABLE 1
PROVINCIAL MENTAL HOSPITAL, CLARESHOLM, ALBERTA
MOVEMENT OF PATIENT POPULATION DURING 1964

	M	F	T	M	F	T
In residence January 1, 1964 .....	....	196	196			
On leave or otherwise absent .....	....	3	3			
Patients on the books January 1, 1964 .....				....	199	199
ADMISSIONS:						
First Admissions:	M	F	T			
Voluntary .....	....	....	....
Certificates .....	....	1	1			
Warrant .....	....	....	....
M.D. Act .....	....	....	....
	....	1	1			
Re-admissions:						
Voluntary .....	....	....	....
Certificates .....	....	....	....
Warrant .....	....	....	....
M.D. Act .....	....	....	....
Transfers in: .....	....	57	57			
Total Admissions .....				....	58	58
				....	257	257
SEPARATIONS:						
Discharges:						
As recovered .....	....	....	....
As improved .....	....	....	....
As unimproved .....	....	1	1			
Deaths: .....	....	1	1			
Transfers out: .....	....	13	13			
Total Separations .....				....	20	20
Patients on the books December 31, 1964 .....				....	237	237
On leave or otherwise absent .....				....	6	6
In residence December 31, 1964 .....				....	231	231

TABLE 2
PROVINCIAL MENTAL HOSPITAL, CLARESHOLM, ALBERTA
ORIGINAL DIAGNOSES ON ADMISSION TO MENTAL HOSPITAL

	Male	Female	Total
General Paresis	3	3
Psychoses with Other Forms of Syphilis of the			
Central Nervous System	1	1
Psychoses with Epidemic Encephalitis	1	1
Alcoholic Psychoses	4	4
Traumatic Psychoses	1	1
Psychoses with Cerebral Arteriosclerosis	8	8
Psychoses with Other Disturbances of Circulation	1	1
Psychoses with Convulsive Disorders	1	1
Senile Psychoses	1	1
Pre-Senile Psychoses	18	18
Involutional Psychoses	4	4
Psychoses Associated with Organic Changes	1	1
Psychoneuroses	5	5
Manic—Depressive Psychoses	13	13
Dementia Praecox (Schizophrenia)	147	147
Paranoia and Paranoid Conditions	7	7
Psychoses with Mental Deficiency	9	9
Undiagnosed Psychoses	2	2
Without Psychoses	9	9
Tabo-Paresis	1	1
	237	237

TABLE 3
 PROVINCIAL MENTAL HOSPITAL, CLARESHOLM, ALBERTA
 CAUSE OF DEATH DURING 1964
 ABRIDGED INTERNATIONAL CLASSIFICATION

DISEASE	Male	Female	Total
Cerebral Thrombosis	2	2
Cachexia	1	1
Coronary Thrombosis	1	1
Coronary Artery Occlusion	1	1
Cerebral Hemorrhage	1	1
	6	6

TABLE 4
 PROVINCIAL MENTAL HOSPITAL, CLARESHOLM, ALBERTA
 CLASSIFICATION OF DEATHS ACCORDING TO ORIGINAL PSYCHIATRIC
 DIAGNOSIS—1964

DISEASE	Male	Female	Total
Schizophrenia—Catatonic	1	1
Manic Depressive	1	1
Senile Dementia	1	1
Dementia Praecox—Hebesphrenic	1	1
Psychoses with Cerebral Arteriosclerosis	2	2
	6	6

PROVINCIAL AUXILIARY MENTAL HOSPITAL,
RAYMOND, ALBERTA

**R. R. MacLean, M.D., Cert. in Neuro. and Psychiatry,
F.A.P.A., Cert. M.H.A. (A.P.A.)**

MOVEMENT OF PATIENTS

On January 1st, 1964, there were 120 patients in residence, four on Leave of Absence to total 124 patients on the register. Through the year there were two first-admissions. Separations included one transfer to another mental hospital, one discharge as improved and five deaths. On December 31, 1964, there were 116 patients in residence, three on Leave of Absence to total 119 on the register.

ACCIDENTS AND ELOPEMENTS

There were no elopements. There were no accidents of a serious nature.

GENERAL HEALTH

Two patients received prescription eye-glasses. One patient underwent surgery for simple Mastectomy and one had both great toe nails removed. Two patients suffered Cerebro-Vascular accidents. General health of the patients was satisfactory with few colds or other nuisance debilitators. All medical and surgical requirements were satisfactorily met by four medical doctors from the Raymond-Magrath Clinic. The services of a psychiatrist from Lethbridge were also available. All of the necessary X-Rays were handled at the local Municipal Hospital, as were various laboratory tests.

OCCUPATIONAL THERAPY

Eleven staff members were given a course in Remotivation and received certificates. Approximately 30 idle patients were thus benefited with extra attention, new interests, trips off the ward, and most responded very well to this therapy. Other patients were steadily employed in the kitchen, sewing room, laundry and nurses' home. Afternoon tea, treats and cigarettes were served by each department. Several patients enjoyed going to the occupational parlor each morning and afternoon, where they did all kinds of handwork, crocheting, embroidery, weaving, etc. A radio was provided and afternoon teas served. The occupational parlor was also used for special parties and birthday teas. Many enjoyed being out on the lawns and picked fresh flowers for the wards.

LIBRARY

This was situated in the occupational parlor which was also used as a reading room. One new book was purchased each month. The Raymond Library made a sizeable donation of back issues of several pictorial magazines which afforded discussion material as well as remotivation material. Several of the towns' people donated current and back issues of magazines, as did several of the patients and staff.

RELIGIOUS SERVICES

Catholic and United Church Services were held at the hospital once a month. On several occasions a choir from Coaldale, Alberta, brought a Song Service which was thoroughly enjoyed. The Priests, United Church Ministers and Mormon Bishops gave freely of their time when requested and presided at patients' funerals when necessary.

RECREATION AND ENTERTAINMENT

The Lethbridge Ladies' Auxiliary to the Federation of Civic Employees again entertained the patients with a Birthday Tea Party every other month, bringing a beautifully decorated cake, cookies, a gift for each, and sometimes a musically talented guest who entertained for the afternoon. These parties were a fine incentive for the patients to dress up, and most of them appreciated this acknowledgement of their birthdays. Members of this group also took small groups to their homes for teas, dinners and dancing. A picture show was shown on the ward once weekly from October first through March, bimonthly during the spring and fall months. This continues to be the most popular form of entertainment and interests the largest group. The Callow Coach made weekly trips from early spring to late fall. On two occasions the coach took the group to Park Lake for a picnic dinner and scenic drive through the park. This was thoroughly enjoyed by the participants. Throughout the year gifts of clothing, jewellery, cosmetics, etc., were donated by the Major Jack Ross Chapter, I.O.D.E., Hope Community Club at Warner, Alberta, and on several occasions the local Lions Club brought gifts of fresh spring flowers which had been flown in from the coast. At Christmas time the Raymond Music Club again entertained with a splendid concert and refreshments of oranges, cup cakes and ice cream. Bingo parties and dances were held to celebrate special days through the year, with the wards being decorated appropriately. There was a piano, radio and television in the dayroom and annex sitting room.

STAFF CHANGES

One Ward Aide reached retirement age and this position was filled satisfactorily. One Gardener was given a year extension of employment when he reached retirement age. Holiday and sick relief staff was satisfactory and adequate. The Dairyman was transferred to the gardens' staff because of the sale of the hospital dairy herd. The business management of this hospital was transferred from the Provincial Mental Hospital, Ponoka to the Provincial Mental Hospital, Claresholm. This arrangement has been quite satisfactory.

VISITORS

The Director of the Division of Mental Health made several visits through the year. The Business Manager, Store Keeper and Accountant from the Provincial Mental Hospital, Claresholm, made several visits which proved very beneficial. Periodic visits of inspection were made by members of the Departments of Public Health, Public Works, Fire Department and the Electrical and Boiler Inspectors. Monthly calls were made by an Insect Control team which used high pressure insecticide sprayers for the control of flies.

GARDENS AND GROUNDS

The beauty of the lawns and flower beds brought favorable comments from many visitors. Patients and visitors enjoyed picnic lunches

under the trees and the wards were kept cheery with fresh flower bouquets. It was not a good root-vegetable year but the yield of the vegetable garden was adequate for the summer and winter requirements.

RENOVATION AND CONSTRUCTION

In the main building the entire upper floor was redecorated and new wash basins and toilet water tanks installed in the bathrooms. The 36-inch beds in one sleeping dormitory were replaced with 30-inch beds which enabled more comfortable handling of the patients. New cupboards were built in the kitchen. A new storage room for dry goods was built in the attic space of the sewing room, freeing much needed space in the general storeroom. A gas-fired garbage burner was installed in the boiler room which was very efficient. An added benefit derived from it was a great reduction in the fly population. The entire roof of the main building was reshingled with heavy asphalt shingles. The east roof of the boiler room building was reshingled with cedar shingles. The roadway and all space between the various institutional buildings was graded and asphalt surfaced. This added considerably to the appearance of the hospital grounds, eliminated a major mud problem in wet weather and greatly reduced the dust problem in the buildings in windy weather.

CONCLUSION

The general health of the patients was satisfactory. There were adequate medical and dental services. There were no infectious illnesses. There was no shortage of staff personnel and medical supplies were adequate.

TABLE 1
PROVINCIAL AUXILIARY MENTAL HOSPITAL, RAYMOND, ALBERTA
MOVEMENT OF PATIENT POPULATION DURING 1964

	M	F	T	M	F	T
In residence January 1, 1964 .....	....	120	120			
On leave or otherwise absent .....	....	4	4			
Patients on the books January 1, 1964 .....				....	124	124
ADMISSIONS:						
First Admissions:	M	F	T			
Voluntary .....	....	....	....
Certificates .....	....	2	2			
Warrant .....	....	....	....
M.D. Act .....	....	....	....
			
Re-admissions:						
Voluntary .....	....	....	....
Certificates .....	....	....	....
Warrant .....	....	....	....
M.D. Act .....	....	....	....
			
Transfers in: .....	....	....	....
			
Total Admissions .....	....	....	....	....	2	2
	....	....	....	....	126	126
SEPARATIONS:						
Discharges:						
As recovered .....	....	....	....
As improved .....	....	1	1			
As unimproved .....	....	....	....
			
Deaths: .....	....	1	1			
	....	5	5			
Transfers out: .....	....	1	1			
			
Total Separations .....	....	....	....	....	7	7
	....	....	....	....	119	119
Patients on the books December 31, 1964 .....				....	3	3
On leave or otherwise absent .....				....	116	116
In residence December 31, 1964 .....				....

TABLE 2
PROVINCIAL AUXILIARY MENTAL HOSPITAL, RAYMOND, ALBERTA
ORIGINAL DIAGNOSES ON ADMISSION TO MENTAL HOSPITAL

	Male	Female	Total
Schizophrenic Disorders	81	81
Manic-Depressive Reactions	9	9
Paranoia and Paranoid States	6	6
Senile Psychosis	3	3
Pre-Senile Psychosis	1	1
Psychosis with Cerebral Arteriosclerosis	8	8
Alcoholic Psychosis—Chronic Alcoholic Hallucinations	1	1
Psychosis with Other Demonstrable Etiology (Epilepsy)	1	1
Psychosis with Psychopathic Personality	2	2
Psychosis with Mental Deficiency	2	2
Not Psychotic—Mental Deficiency	3	3
General Paresis of Insane	2	2
	...	119	119

TABLE 3
PROVINCIAL AUXILIARY MENTAL HOSPITAL, RAYMOND, ALBERTA
CAUSES OF DEATH DURING 1964
ABRIDGED INTERNATIONAL CLASSIFICATION

CLASSIFICATION	Male	Female	Total
Arteriosclerotic and degenerative Heart Disease	4	4
Hypertension with Heart Disease	1	1
TOTALS	5	5

TABLE 4
PROVINCIAL AUXILIARY MENTAL HOSPITAL, RAYMOND, ALBERTA
DEATHS BY ORIGINAL DIAGNOSIS

	Male	Female	Total
Schizophrenic Disorders	2	2
Paranoia and Paranoid Conditions	1	1
Senility with Paranoid Trend	1	1
Senility with Cerebral Arteriosclerosis	1	1
TOTALS	5	5

ROSEHAVEN, CAMROSE

**R. R. MacLean, M.D., Cert. in Neurol. and Psychiatry,
F.A.P.A., Cert. M.H.A. (A.P.A.)**

MOVEMENT OF RESIDENTS

On January 1, 1964, the resident population at Rosehaven numbered 501, of which 285 were men and 216 were women. The total number in residence on December 31, 1964 was 500; 285 men and 215 women.

There were 151 residents admitted to Rosehaven during 1964. Of this number, 20 were received from the Provincial Mental Hospital, Ponoka, 105 from the Provincial Mental Institute, Edmonton, one was readmitted and 25 returned from extended leave of absence.

Separations from Rosehaven during 1964 numbered 152; 123 were attributable to death, three were transferred to other institutions and 26 went on leave of absence.

Admissions throughout the year in the form of transfers from other mental hospitals in Alberta filled beds made available by death or discharge. The average daily population was 504.9.

Deaths were due to degenerative causes. The average age of the residents at death was 81 years.

ACCIDENTS AND ELOPEMENTS

During the year a number of residents received injuries either from accidental falls or as a result of interference from other residents. Some of these resulted in contusions and lacerations of a minor nature and required only first aid treatment. There were 63 accidents which required either medical and surgical attention or X-ray investigation. These included 13 severe contusions, six suturings, 28 fractures and 16 X-ray investigations.

GENERAL HEALTH

The general health of the residents was considered good in view of the age group. An increased mental and physical deterioration was noticed in the newly admitted as well as other residents.

An average of 60 residents required bed care each day. During the year, 40 residents were admitted to St. Mary's Hospital and spent 292 hospital days for surgical, medical or orthopedic care.

Out-patient work done at St. Mary's Hospital for Rosehaven residents consisted of 270 laboratory tests, 66 X-ray pictures, five diagnostic tests and five minor surgical procedures. Thirty-seven specimens were sent to the Provincial Laboratory. All residents were X-rayed by the Tuberculosis Mobile X-ray Unit and Heaf tests were given. Further X-ray investigation was done when reports indicated the need.

Medical care was supplied by the Smith Clinic of Camrose.

One visit was made by the dentist from the Provincial Mental Institute, Edmonton and necessary care was given. Emergency dental work was done by local dentists.

The service of a local optometrist was available to residents.

OCCUPATIONAL THERAPY

Occupational therapy classes were operated throughout the year. Groups of men and women from each ward attended twice each week. Articles made were readily sold, being purchased by the residents, staff members or friends. An average of 13 residents worked in institutional services, the laundry and kitchen. The average number of residents employed on wards in light housekeeping tasks was 44.

RELIGIOUS SERVICES

Weekly Protestant Church services were held at Rosehaven and arranged by the local Ministerial Association. The services of a Roman Catholic Priest were available as needed.

RECREATION

Residents were taken out as a lawn group when weather permitted. An average of 108 residents had grounds privileges and were out almost daily. A movie film was shown every other week from October to June with an average attendance of 100. Birthday parties were arranged for a limited number of residents, as well as special entertainment at Christmas, Valentine's Day and Easter. Picnic outings were arranged during the summer and included a trip to the Alberta Game Farm. Cards, games, television and radios were available for the use of the residents. Several organizations and church groups sponsored car rides, concerts and teas for the residents. Ex-service men were visited regularly by members of the Ladies' Auxiliary to the Canadian Legion. An average interest in the residents was shown by outside groups.

BUILDINGS

The buildings have been well maintained and repairs done promptly.

GARDEN AND GROUNDS

The garden and grounds were well maintained during the year. The flower beds and lawns were exceptionally beautiful during the summer.

STAFF

The general health of the staff was good. There was a considerable number of staff members who lost time due to lumbar strain or injury. T.A.B. vaccine was given to all staff members. All staff was X-rayed by the Tuberculosis Mobile X-ray Unit and Heaf tests given.

Vacancies arising from resignations were filled although trained personnel was not always available.

VISITORS

Regular visits were made to Rosehaven by the Director of Mental Health.

DEPARTMENT OF PUBLIC HEALTH

TABLE 1
ROSEHAVEN, CAMROSE, ALBERTA
MOVEMENT OF POPULATION DURING 1964

	M	F	T	M	F	T
In residence December 31, 1963				285	216	501
ADMISSIONS:						
From P.M.H., Ponoka	14	6	20			
From P.M.I., Edmonton	66	39	105			
Readmitted	1	1	1			
Returned from extended L.O.A.	4	21	25			
	84	67	151			
				84	67	151
				369	283	652
SEPARATIONS:						
Deaths	79	44	123			
Discharged to P.M.I., Edmonton	3	3	3			
On extended L.O.A.	5	21	26			
	84	68	152			
				84	68	152
In residence December 31, 1964				285	215	500

TABLE 2
ROSEHAVEN, CAMROSE, ALBERTA
ORIGINAL DIAGNOSIS ON ADMISSION TO MENTAL HOSPITALS

Schizophrenic Disorders	97
Manic Depressive Reaction	24
Involuntal Psychosis	3
Paranoia and Paranoid States	27
Senile Psychosis	176
Psychosis with Arteriosclerosis	117
Alcoholic Psychosis	4
Psychosis of Demonstrable Etiology	9
Other and Unspecified Psychoses	15
Psychoneurotic Disorders	1
Pathological Personality	1
Alcoholism	6
Mental Deficiency	5
General Paralysis of Insane	3
Other Syphilis of Central Nervous System	1
Organic Brain Syndrome	2
Senility	7
Not Psychotic	2
	500

TABLE 3
ROSEHAVEN, CAMROSE, ALBERTA
CAUSES OF DEATH DURING 1964
ABRIDGED INTERNATIONAL CLASSIFICATION

DISEASE	Male	Female	Total
All Other Diseases Classified as Infective and Parasitic	1	1	2
Malignant Neoplasms	2	...	2
Vascular Disease Central Nervous System	1	1	2
Arteriosclerotic and Degenerative Heart Disease	25	18	43
Pneumonia	47	24	71
Ulcer of Stomach and Duodenum	1	...	1
Gastritis	1	...	1
Intestinal Obstruction and Hernia	1	...	1
TOTALS	79	44	123

TABLE 4
ROSEHAVEN, CAMROSE, ALBERTA
CLASSIFICATION OF DEATHS ACCORDING TO ORIGINAL PSYCHIATRIC DIAGNOSIS.
1964

DISEASE	Male	Female	Total
Schizophrenic Disorders	5	3	8
Manic Depressive Reaction	3	...	3
Paranoia and Paranoid States	4	1	5
Senile Psychosis	32	23	55
Psychosis with Arteriosclerosis	27	16	43
Undiagnosed	2	1	3
Organic Brain Syndrome	3	...	3
General Paresis of Insane	1	...	1
Other Drug Addiction	1	...	1
Not Psychotic	1	...	1
TOTALS	79	44	123

INSTITUTIONS FOR MENTAL DEFECTIVES

THE PROVINCIAL TRAINING SCHOOL, RED DEER

DEERHOME, RED DEER

The Provincial Training School patient population increased to 869 from a previous population of approximately 844. Nine patients were transferred to Deerhome. There were ten deaths.

During the year another 41 beds became available at the Baker Memorial Sanatorium for paediatric cases, making a total of 86.

The training program at the Training School continued intensively. Thirty-five trainees were discharged during the year.

Eighteen Nursing Staff members received Certificates in Mental Deficiency Nursing.

Deerhome's patient population reached 974 during the year, from a previous high of 958. Ten patients were discharged and there were thirteen deaths.

PROVINCIAL TRAINING SCHOOL, RED DEER

**L. J. le Vann, L.R.C.P. Edin., L.R.C.S. Edin.,
L.R.F.P.S. Glas., Medical Superintendent**

IN RESIDENCE, ADMISSIONS, DISCHARGES, DEATHS

The number of patients on the Provincial Training School roster increased to 869 on December 31, 1964. These included 783 in residence at the Provincial Training School and 86 in residence at the Paediatric Unit at the Baker Memorial Sanatorium. This arrangement for beds in the Calgary area for the Provincial Training School has proven a very useful one, since it has been possible to effect exchanges of patients between both these areas, to help administrative requirements and in many instances making it possible to hospitalize children whose parents lived in the Calgary area and in this way, make visits to the child easier for these parents.

There were 77 new admissions effected during the year, 37 male, 40 female. Seven trainees were readmitted. Of the patients who were placed on a temporary parole basis throughout the year, 35 were discharged; 20 male and 15 female. These discharges were largely to employment areas established by the School Social Worker where the trainees had proven their capacity to be self-supporting.

The death rate remained characteristically low, there being in all 10 deaths, 7 male and 3 female.

APPLICATIONS FOR ADMISSION

The number of applications for admissions continued to increase and 157 were received during 1964. Of these new applications, it was possible to admit 28 of the most seriously urgent cases.

EUGENICS BOARD VISITS, STERILIZATIONS, ET CETERA

The Eugenics Board visited on four separate occasions during the year and 40 cases were presented to them for their consideration.

STAFF CHANGES AND ACTIVITIES

The staff remained remarkably constant during the year and all the senior positions were filled. The largest movement of staff occurred amongst the first-year students, many of whom were working at their first job away from home and were of an age group still uncommitted to one particular form of employment or who left to be married.

The Honourable Dr. J. Donovan Ross, Minister of Health of Alberta and Dr. Randall R. MacLean, Director, Division of Mental Health visited the School on numerous occasions, as did the class of senior medical students from the University of Alberta. Many groups involved in teaching normal children and graduate students from several Universities in North America also visited the School on many occasions.

HEALTH OF TRAINEES AND STAFF

The health of trainees and staff remained unremarkable. There were no major epidemics, other than sporadic localized incidence of the childhood fevers and the occasional appearance of gastroenteric infections. Immunization procedures were carried out for diphtheria, whooping cough, tetanus and poliomyelitis and the enteric fevers. There were no cases of Tuberculosis, either of the pulmonary or bovine type discovered amongst the patients of this School during the year.

TRAINING PROGRAM FOR NURSES AND ATTENDANTS

The School continued as one of the few areas in the whole of Canada where a comprehensive course in Mental Deficiency Nursing training for young men and women was available. 133 nursing students (male and female) took part in the training program during 1964. 18 students graduated in this nursing course and received their diplomas from the Honourable Minister of Health, Dr. J. Donovan Ross.

TRAINING PROGRAM FOR TRAINEES

The School remained vigilant in exploring more advanced means of assessing and developing the specific talent of the mentally limited child. Over the years it has become apparent that the emphasis of the retarded child's training should be along practical lines. Reading, writing, arithmetic and social studies serve little practical use to the retarded child, if they are presented in esoteric or abstract terms. It is believed here that it is increasingly important to teach these subjects utilizing a pragmatic approach and as much as possible associating these subjects with every day life situations. This procedure, which was started at this School some 16 years ago continued to be emphasized this year.

Another departure from previous years was the incorporation of students into remedial subject classes. During past years, when a child was maintained at a particular school level, it was often found that his arithmetic ability might be a level V, whereas, his reading level was

not much higher than level II. With this in mind, children were this year grouped in their basic subjects in accordance with their achieved level. This proved very useful by allowing teachers who had a special facility or interest in teaching a subject to concentrate on that subject. Many of the trainees who had been almost hopelessly held back because of a one subject weakness, were now able to accelerate their educational program in their stronger subjects and receive remedial instruction in their weaker ones.

The Vocational Training class completed a four-sheet artificial-ice curling rink, which was opened April 5th, by the Honourable Dr. J. Donovan Ross, Minister of Health. This rink proved to be a marked recreational advantage to many children, as well as a means of increasing neuro-muscular co-ordination for many of them.

The amplification of cooking classes was not merely continued but further augmented by forming a cooking class for boys as well as girls.

In all, 298 children attended the Sense Training, middle and senior schools during the year. Much as in previous years, the children of the school won many prizes at the Edmonton Exhibition and Red Deer Fair. A Christmas concert was presented by the children of the Provincial Training School, as well as by the children of Linden House. This concert was open to parents of children, staff and the general public of Red Deer and District.

The Vocational Training program for the school boys was further developed by the addition to the farm stock of beef animals. A more diversified agricultural program including the mechanized aspect of farming for the more able boys, included not merely the use and repair of farm machinery but also the driving of tractors and combines, as well as other mechanically driven equipment.

By the use of safety precaution and drills no accident occurred as a result of this advanced training.

RECREATIONAL ACTIVITIES

The importance of an all inclusive recreational program was one of the essential features in maintaining patient activity and interest, as well as diminishing the incidence of senseless impulsivity, assault or destruction of property.

In addition, stimulating activities not merely helped maintain rapport with the patient, but were often a prophylactic measure to reduce the need of tranquilizing drugs, locked doors and restraint.

The recreational program included such activities as nature hikes, bicycle rides, ball games, sport day activities and picnics. A fastball league was organized, as well as hockey and broomball leagues. Keepfit and gymnastic programs were also maintained. Special fete days were celebrated with parties and costume parades. These included Valentine's Day, St. Patrick's Day, Hallowe'en, Thanksgiving, Remembrance Day, Christmas and New Year's Eve. Special entertainment was also provided by the Jeunesse Musicale, "Grand Ole Opry", Children's Theatre Play, a Puppet and Musicians' show as well. Selected patients attended the Red Deer School of Dancing presentation.

The only limitation to the program remained the recreational hall which was originally constructed for the use of some 400 patients. The

patient population is now double that and this temporary building has been in existence close to two decades and consideration might be given for its amplification or a new recreational building to be built in association with the curling rink and adjacent athletic field complex.

AGRICULTURAL ACTIVITIES

This program continued as in previous years and it is recognized that in a Province where one of the major industries is agriculture, the need to prepare boys ready for discharge for this sort of work cannot be over-emphasized.

It was possible to discharge 15 boys to become self-supporting. This year 39 boys attended various aspects of the farm training program. This included, not merely animal husbandry and agriculture, but, the care and operation of all modern farm equipment and machinery.

The nucleus herd of beef cattle which were purchased have multiplied and male animals born to the dairy herd were also retained so that feeding and fattening methods of beef might provide practical instruction for the boys in the farm classes.

OCCUPATIONAL THERAPY

The Occupational Therapy department maintained its previous high level. It has been possible to train Occupational Therapy Aides during the past several years and the vast majority of the staff who have completed their training have remained at the School. This has given the Occupational Therapy department a trained teaching cadre which has been exemplified by the work turned out by the Occupational Therapy department. Here too, work carried out by the children was consistent with the variety of activities available for the patients.

VOCATIONAL TRAINING

In addition to completing the curling rink, the vocational training school boys built a large outdoor motor boat for the Parent School Organization; provided the A.M.A. with the necessary "Stop" Signs for the children's patrols in the City of Red Deer; provided maintenance work for the cottages at Gull Lake as well as making a variety of furniture, tables, nut bowls, bird houses and cabinets for the annual sale.

SHOEMAKER

The Shoemaker was able to maintain the necessary shoe repairs for both Deerhome and the Provincial Training School. He was assisted by some of the higher grade boys of the Provincial Training School who were incapable of heavy manual work or through some other physical defect were not able to be trained in outdoor activities.

DENTAL CARE

The dental care of the school's children made striking improvement during the past year. The dentist saw a total of 1,230 patients and was able to do a large amount of reparative and prophylactic work.

LABORATORY

4,639 various laboratory procedures were carried out during the year, including histological preparations for the Pathologist. Tests included hemoglobin estimates, blood cell estimates and differential counts, blood sugars, blood urea, nitrogen and a variety of other biochemical tests so necessary in order to establish diagnosis and treatment amongst patients who are often incapable of giving valid histories.

X-RAY AND E.E.G. REPORT

During the year 825 films were taken which included 210 for the Deerhome Institute. 56 E.E.G. tracings were also taken, Deerhome (5), Provincial Guidance Clinic (16), Provincial Training School (35).

SOCIAL SERVICE DEPARTMENT

The Social Worker saw 207 persons for admission interviews and office interviews generally. In addition, she carried out:

135 Trainee visits

146 Home and placement visits

139 Shopping trips with trainees, both placed out
and at the School

There were 55 trainees working out this year, 22 part-time and 33 in permanent placements.

A male placement officer was appointed in December in order to take fuller advantage of placement opportunities for trained boys at this School and to ensure that a maximum of such placements were made, in this way making beds available for new admissions.

EXTRA MURAL ACTIVITIES

The staff appeared at many organizations for lectures as well as T.V. and Radio addresses. The children, in addition to their various recreational activities spent at least one week at the Randall R. MacLean Cottages. The parents provided additional equipment for the camp, as well as providing materials for maintenance.

The purchase of a large school bus for the school by the Provincial Department of Health made it possible to transport a large number of the children to hockey matches, swimming regattas and made possible the transportation of many wheelchair children to camp and picnic areas away from the School that they were previously unable to attend.

RESEARCH AND ORIGINAL INVESTIGATIONS

One original investigation was completed during the year on "Birth Deformities of Children Born during 1962". This was a sequel to a paper previously published in 1961, dealing with Birth Deformities during the years 1959 and 1960.

An investigation dealing with the induction of somatic deformities in chick embryos induced by X-radiation was also completed and will become part of a paper dealing with radiation deformities and the possibility of Thalidomide as an adjuvant, with hooded rats.

DIETARY DEPARTMENT

The Dietary Department carried out a full program of meals for patients as well as staff members with a good varied menu. Special efforts were made to provide an attractive menu for the various children's parties held throughout the year on such occasions as St. Valentine's Day and Easter. During the summer months picnic lunches were provided for outdoor activities, such as wiener roasts and hamburger fries held by various patient groups.

In addition the Kitchen prepared and preserved farm and garden produce including 9,600 pounds of carrots diced and frozen for storage to be used next Spring and Summer. In addition to this 1,200 gallons of dill pickles were prepared.

LAUNDRY AND LINEN REPAIR

The service provided by this Department was good considering the limited facilities available. With the new Services Building commenced in the latter half of 1964 and still under construction it is hoped that the more extensive equipment will enable the Laundry to further improve this area of service to the Institution.

STORES

A perpetual inventory of approximately \$100,000.00 was maintained by this Department supplying all Institutional requirements for food, clothing, drugs, hardware, cleaning supplies, et cetera on a daily basis.

FARM

Grain crops yielded well in spite of dry hot weather during part of the growing season. Enough reserve subsoil moisture was available to carry the crops through the summer. No hail damage or early frost was experienced, but six weeks of extremely wet weather after swathing reduced the grades to some extent. Hay crops were lighter than last year, stands of grass being quite thick on the ground but not very tall due to dry weather. Second cut hay did not crop well and difficulties were encountered in harvesting it due to the prolonged wet weather in the fall.

Milk production compared favourably with last year. Average yields per cow being about the same, but butterfat tests higher. A greater selection of bulls available through the Lacombe Artificial Breeding unit and some special order semen was used on selected cows in order to improve the quality of the herd. One of the school's cows was awarded a gold seal certificate for lifetime production of milk and butterfat, only five of these previously had won in Alberta since R.O.P. records started some 50 years ago.

Pork production was slightly lower for the year, partly due to the necessity of keeping some young females for replacement brood sow stock and partly due to having to dispose of some older sows. A new boar was brought in from the Department of Agriculture to take care of breeding needs on these young sows.

Egg production was maintained at a high level all year even during extremely cold weather. Since commencing to use inbred hybrids several years ago production increased considerably.

The use of artificial insemination on the beef cows did not prove satisfactory. A young bull was therefore purchased last summer to remedy this problem. Since last winter the Holstein bull calves have been kept for fattening. The exceptional good animal suitable for registration was also kept. The farm started to provide some beef for Institutional needs. The raising and feeding of some cattle for beef broadened the training program considerably.

GARDEN

Most vegetable crops yielded fairly well, the main exception being potatoes. Hot dry weather during the summer slowed growth considerably with wet weather in the fall causing many to split, and creating some harvesting problems. A good crop of hot house tomatoes was obtained from the greenhouse, but cucumbers were damaged heavily by a light frost during the last week of August. However, a sufficient number were harvested to provide pickles for school use and a large amount of sauerkraut was made from part of the excess cabbage crop.

GROUNDS

Some areas were re-landscaped due to excavations for new sewer and water lines last winter. Considerable settling occurred in these areas all summer, necessitating a lot of refill work and re-seeding of lawn grass, several times in some places. New landscaping operations were carried out around the senior school building and the curling rink and levelling and grading of a new playground was started in the fall. Snow clearing was somewhat of a problem this winter due to the heavy snowfall and extremely cold weather experienced, but the acquisition of a small front-end loader for one of the tractors facilitated snow removal operations. Flowers bloomed well during the summer and flowering trees and shrubs were very showy last spring. Some lawns, however, suffered from hot dry weather, particularly in July and August.

GARBAGE DISPOSAL

The maintenance staff of the Department of Public Works did a satisfactory job of handling dry garbage and operated the incinerator except on Saturdays, Sundays and holidays, when it was done by a member of the Farm and Garden staff.

MAINTENANCE

Following are some of the major jobs completed by the Maintenance Department during the last year:

Carpentry:

- (a) Complete new roof on Ash Villa.
- (b) 625 feet of new sidewalk construction.
- (c) Complete renovation of Pasteurizer including new floor and shelving.
- (d) Regular daily maintenance, including repairs to furniture, windows, doors, fences, cupboards, sidewalks, et cetera.

Painting:

- (a) Complete interior of Infirmary Villa.
- (b) Interior of Juniper Villa.
- (c) Interior of Power House including identification colouring of all pipe work.
- (d) Portions of Male Staff and O.T. building.
- (e) Regular maintenance painting, including re-finishing of chairs, benches, tables, beds, et cetera.

Plumbing and Electrical:

- (a) Installation of water lines and hydrant at Summer Camp.
- (b) Replacement of heating units in Elder & Juniper Villas.
- (c) Routine maintenance work as required, including the installation of new equipment and upkeep of lighting fixtures, appliances, radios, water, sewer and telephone systems.

APPRECIATION

The Administration of this School would like to express its deep appreciation for the many facilities made available by the Department of Health and the interest shown in the School and its activities by the Honourable Dr. J. Donovan Ross, Minister of Health for the Province of Alberta. The School is not without gratitude for the help and advice so generously made available by Dr. Randall R. MacLean, Director, Division of Mental Health. The School would like to thank the members of the Parent School Association of the Provincial Training School for their devoted efforts on behalf of the children and the financial assistance given by this Association, as well as the many parents who have worked far beyond the required expectation in helping to maintain a high level of care for the children. And finally, commendation to all staff members of the School whose work extended beyond merely that of duty on behalf of the mentally-limited children at this School.

TABLE 1
PROVINCIAL TRAINING SCHOOL, RED DEER, ALBERTA
MOVEMENT OF FEEBLEMINDED POPULATION

	M	F	T	M	F	T
Defectives on Books of Institution as at 1st of January, 1964				477	367	844
ADMISSIONS:						
1. First Admissions—voluntary	37	40	77			
2. Readmissions	4	3	7			
3. Transfers	—	—	—			
Total number of admissions	41	43	84	41	43	84
Total Number of Defectives on the Books during 1964				518	410	928
SEPARATIONS:						
1. Discharges	20	15	35			
2. Transfers	8	6	14			
3. Deaths	7	3	10			
Total Number of separations	35	24	59	35	24	59
Defectives on the Books of the Institution at 31st December, 1964				483	386	869

TABLE 2
PROVINCIAL TRAINING SCHOOL, RED DEER, ALBERTA
AGE OF RESIDENT POPULATION CLASSIFIED WITH REFERENCE TO MENTAL STATUS

AGE GROUP	IDIOT			IMBECILE			MORON			BORDERLINE			TOTALS		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
0 - 4 years	6	5	11	16	16	32	1	1	1	1	1	1	22	22	44
5 - 9 years	22	22	44	56	35	91	9	9	9	1	1	1	87	57	144
10 - 14 years	17	17	34	83	69	152	37	16	53	1	1	1	137	103	240
15 - 19 years	11	10	21	21	60	128	54	38	92	2	2	5	136	110	246
20 - 24 years	14	15	29	26	15	41	15	15	30	1	1	1	55	45	100
25 - 29 years	8	8	16	11	7	18	3	1	4	1	1	1	23	16	39
30 - 34 years	5	1	6	3	4	7	1	1	2	1	1	1	9	6	15
35 - 39 years	4	3	7	3	3	6	2	2	2	1	1	1	7	8	15
40 - 44 years	2	2	4	2	2	4	1	1	1	1	1	1	4	4	8
45 - 49 years	1	1	2	1	2	3	1	1	1	1	1	1	1	7	8
50 - 54 years	1	1	2	1	2	3	1	1	1	1	1	1	1	4	4
55 - 59 years	1	1	2	1	3	4	1	1	1	1	1	1	1	4	5
60 - 64 years	1	1	2	1	3	4	1	1	1	1	1	1	1	4	5
65 - 69 years	1	1	2	1	1	2	1	1	1	1	1	1	1	1	1
TOTALS	89	89	178	271	218	489	119	76	195	4	3	7	483	386	869

TABLE 3
PROVINCIAL TRAINING SCHOOL, RED DEER, ALBERTA
MENTAL STATUS OF FIRST ADMISSIONS, READMISSIONS AND TRANSFERS

Mental Status	First Admissions			Readmissions			Transfers			Totals		
	M	F	T	M	F	T	M	F	T	M	F	T
Idiot	8	10	18	....	....	....	....	....	....	8	10	18
Imbecile	19	23	42	2	2	4	....	....	....	21	25	46
Moron	9	7	16	2	1	3	....	....	....	11	8	19
Borderline	1	....	1	....	....	....	....	....	....	1	....	1
TOTALS	37	40	77	4	3	7	....	....	....	41	43	84

TABLE 4
PROVINCIAL TRAINING SCHOOL, RED DEER, ALBERTA
AGE GROUP OF FIRST ADMISSIONS, READMISSIONS AND TRANSFERS

Age Group	First Admissions			Readmissions			Transfers			Totals		
	M	F	T	M	F	T	M	F	T	M	F	T
0 - 4 years	12	16	28	....	1	1	....	....	....	12	17	29
5 - 9 years	15	16	31	2	....	2	....	....	....	17	16	33
10 - 14 years	8	6	14	....	....	....	....	....	....	8	6	14
15 - 19 years	2	2	4	....	....	....	....	....	....	2	2	4
20 - 24 years .....	....	....	....	2	1	3	....	....	....	2	1	3
25 - 29 years .....	....	....	....	....	....	....	....	....	....	....	....	....
30 - 34 years .....	....	....	....	....	....	....	....	....	....	....	....	....
35 - 39 years .....	....	....	....	....	....	....	....	....	....	....	....	....
40 - 44 years .....	....	....	....	....	....	....	....	....	....	....	....	....
45 - 49 years .....	....	....	....	....	1	1	....	....	....	....	1	1
TOTALS	37	40	77	4	3	7	....	....	....	41	43	84

TABLE 5
PROVINCIAL TRAINING SCHOOL, RED DEER, ALBERTA
CAUSES OF DEATH DURING 1964

CAUSE OF DEATH	Male	Female	Total
Bronchopneumonia	1	....	1
Pneumonia	1	2	3
Paralytic Ileus	1	....	1
Gross Hydrocephalus	1	....	1
Meningitis	1	....	1
Congenital Microcephaly	1	1	2
Cerebral Quadriplegia	1	....	1
TOTALS	7	3	10

TABLE 6
PROVINCIAL TRAINING SCHOOL, RED DEER, ALBERTA
DEATHS BY INTELLIGENCE LEVELS

CLASSIFICATION	Male	Female	Total
Idiot	6	1	7
Imbecile	1	2	3
Moron .....	....	....	....
Borderline .....	....	....	....
TOTALS	7	3	10

TABLE 7
PROVINCIAL TRAINING SCHOOL, RED DEER, ALBERTA
DENTAL CARE

Examinations	1,230
Restorations (fillings of all types)	641
Extractions	468
P. E. Treatments (Incl. emergencies)	95
Scalings and Prophylaxes	185
Orthodontic Appliance (Bite Plane)	3
Stainless Steel Crowns	8
Topical Fluoride Treatments	3
Full Dentures	2
Partial Dentures	3
Denture Relines	3
Dental Adjustments	13
X-rays	76
Work done under General Anaesthetic	46

DEERHOME, RED DEER

**R. R. MacLean, M.D., Cert. Neurol. and Psych.,
F.A.P.A., Cert. M.H.A. (A.P.A.)**

MOVEMENT OF RESIDENTS

The number of patients in residence on 1st January, 1964, was 958 of whom 512 were male and 446 were female. On 31st December, 1964, the number of patients in residence was 974 of whom 517 were male and 457 were female. The details are as set out in Table 1.

GENERAL HEALTH

The general health of the patients was good. Medical care was provided by the Parsons' Clinic, Red Deer, on the basis of a physician visiting regularly, two mornings per week, and responding to all emergency calls as the need arose. There was an average of 65 patients per week prescribed for under this scheme. In the interim, supervision was carried out by Registered Nurses.

Surgery was necessary for 38 patients, excluding eugenics. Of these, 22 were minor surgery and 16 were major surgery. Of these cases, 30 were admitted to Red Deer Municipal Hospital, three were admitted to the Provincial Training School, and five were attended to at the Parsons' Clinic.

Twenty-four patients were presented to the Eugenics Board and successful surgery was carried out on 21 patients at the Provincial Training School.

A member of the Provincial Mental Hospital Medical staff visited regularly and interviewed and prescribed treatment for any psychotic or disturbed patients.

The Director of the Division of Mental Health visited the institution frequently, made rounds and attended to many administrative matters.

A routine admission chest X-ray was taken of each patient admitted direct to Deerhome, and these X-rays were sent to the Baker Memorial Sanatorium for interpretation.

There was a total of 160 diagnostic X-rays taken upon the doctor's recommendation and a total of four dental X-rays, at the Provincial Training School or Parson's Clinic.

The Laboratory Department did extensive blood work as well as urinalyses and Wassermans which were carried out on all new admissions.

Domestic staff and dietary staff had chest X-rays and throat and stool cultures done routinely as required by the local Board of Health. All patients on tranquillizers and epileptic medications had urinalyses, White Blood Counts and Hemaglobins every three months or whenever advisable.

Dental Clinics were held regularly, 109 clinics in all. A total of 1,503 patients were seen, 338 fillings were done and numerous treatments were carried out. There were 558 extractions, using local anaesthetics; twenty-seven patients were supplied with new dentures and many other dental repairs and adjustments were done.

The local optometrist examined forty-six patients and a total of thirty-three visits were made to the local ophthalmologists for specialist examination and treatment. There were 117 pairs of glasses repaired and thirty-three patients were fitted with new glasses.

There were two cases of infectious hepatitis which were reported to the Medical Officer of Health who supplied Gamma Globulin in sufficient quantity to immunize both patients and staff contacts.

ACCIDENTS AND ELOPEMENTS

There were twenty-eight accidents resulting in fractures. There were twelve elopements; of these, one stayed out overnight.

OCCUPATIONAL THERAPY

The total number of patients receiving daily occupational therapy was approximately 252; of these, approximately one-third were male. The majority of the male patients were interested in woodworking such as making lawn furniture, bedside tables, desks and various types of cabinets, many of which were custom built. There were 614 articles completed in the Woodworking Shop. The male patients showed considerable interest in leathercraft, weaving, rug making and ceramics. Five male staff supervised the above projects. The female patients, under the supervision of seven female staff, completed articles which were knitted, embroidered, and hand woven; a number of stuffed toys were also made in this department. There were special classes for those patients incapable of doing intricate handwork or of concentrating for long periods. These patients were supervised while doing coloring or simple embroidery.

The Annual Sale and Tea was held on the 4th November and was an outstanding success. There were approximately 3,600 articles for sale; all but a few odd articles were sold, and many special orders were taken for delivery prior to Christmas. These articles included toys, knitted and embroidered articles, ceramics, woodwork, leatherwork, basketwork and rugs.

The quality of work in general improved again this year. Thirty-three prizes were won in the field of domestic arts at the Red Deer Fair in August, 1964.

Many of the patients were capable of gainful employment off the premises of Deerhome, and many were employed on the premises in various departments, under supervision.

There were 20-50 boys working out on a daily basis, from 1st May to 1st October, and six boys worked out a monthly basis, giving a total of 3,919 working days on a daily basis, and 85 months for the boys who worked on a monthly basis. A total of nineteen girls worked out on a daily basis, two on a monthly basis, and ironing from outside is accepted for three girls.

Approximately 335 male and female patients assisted with the routine work in various departments of Deerhome, such as laundry, kitchen, stores, male and female staff residences, and at various seasonal occupations.

RELIGIOUS SERVICES

The spiritual needs of the Protestant patients were attended to by the Red Deer Ministerial Association. Each Minister took turns and held Sunday services throughout the year, with the exception of the months of July and August.

The Roman Catholic clergy visited the Roman Catholic and Greek Catholic patients at regular intervals, and Mass was said at least once a month.

PATIENTS' RECREATION PROGRAM

The following program was followed throughout the year on Deerhome premises:—

1. Walking parties (weather permitting) were carried out daily with as many patients participating as were physically fit to do so.
2. Physical fitness classes were carried out routinely, with ingenious methods used to activate the wheelchair patients.
3. Swimming classes were attended twice weekly at the downtown swimming pool.
4. Skating took place on the Deerhome rink, and a number of boys took part in hockey games.
5. Many of the patients were able to take part in bowling at the downtown bowling alley.
6. During the summer, regular bike riding parties were taken out.
7. During the winter, tobogganing proved a favourite sport.
8. Other pastimes enjoyed in the Recreation Hall were square dancing and soft ball.
9. Inside games included bingo, table tennis, cribbage and card parties.
10. Other numerous entertainments enjoyed were film shows, professional hockey games downtown, dances at Deerhome, concerts both at Deerhome and downtown, bus rides and picnics, including trips to the Calgary Zoo, the Alberta Game Farm, Ponoka Sports Day, and a tour to see the Christmas lights, as well as the Penny Carnival at the Training School. The patients continued to derive much pleasure from television sets, radios, record players and pianos.

The Annual Deerhome Circus was again held in June and was attended by approximately 900 patients with 200 staff supervising and participating. This proved an outstanding success.

During the summer months, Deerhome was given the use of an acreage at Sylvan Lake on which there were a house and several other buildings. It was possible to establish a summer camp, giving preference to the patients who normally receive neither visitors nor mail. The length of stay was restricted to one week, and it was possible to send

male patients on two occasions and female patients on two other occasions. The patients who took part really enjoyed this type of holiday and the project was felt to be a complete success.

The Red Deer Parade and Fair was again enjoyed by 459 patients during the morning procession and another 267 patients attended the afternoon performances.

Christmas was highlighted with many activities. Christmas concerts with patient talent included two performances to accommodate the active and less active patients. All the lodges had decorated Christmas trees and Santa Claus visited every ward on Christmas morning. There were numerous activities and treats to culminate an eventful holiday season. Approximately 153 patients went home over the Christmas holiday.

The Recreation staff included four males and four females. The co-operation and interest of service clubs and many public minded citizens is acknowledged in the promotion of many of the above events.

During 1964, patient participation increased by approximately one-third in recreational activities as compared to 1963.

GARDEN AND GROUNDS

No further landscaping was done during 1964, but a lawn spray system was installed around one lodge and around the Recreation Hall. 19,000 bedding plants and 1,050 potted plants were raised.

Garden produce was again successfully grown and allowed for full utilization of patient assistance. A total of 307½ tons of various vegetables were grown, 196 tons of which were stored for winter use.

KITCHEN

Staff included eighteen female and twenty male, plus patient help of ten per day. A total of 24,546 meals were served per week; 21,851 normal diets plus 945 special diets, and 1,750 staff meals. An average of 1,180 gallons of milk were used per week, 400 lbs. of butter and 3,510 pounds of meat and fish. Bread was baked on the premises—a total of 720 loaves per day; 220 of these were sent to the Provincial Training School which also received 80 dozen buns once or twice a week.

LAUNDRY

Personnel included twenty-two male and five female, plus patient help of thirty-nine a day. Approximately 50,000 pounds of linen was laundered per week.

STAFF

In general, the health of the staff was good. The routine administration of T.A.B.T. vaccine and poliomyelitis vaccine was carried out. Sabin "sugar lumps" were also given. Approximately 120 staff were vaccinated with Gamma Globulin, against infectious hepatitis.

VISITORS

The Director of the Division of Mental Health visited regularly.

The Alberta Psychiatric Association held a conference at Deerhome early in the year.

Special rounds were made by several groups, including forty teachers from the Alberta Teachers' Association for Retarded Children, ladies from the United Church and members of the Cerebral Palsy Clinic.

Other visitors included members of the local chapter of the Alberta Association of Registered Nurses during a refresher course, approximately fifty members of the nursing staff of the Red Deer Municipal Hospital and a Nursing Consultant from the Mental Health Division, Ottawa, as well as three medical students from the Provincial Mental Hospital, Ponoka, who attended approximately every other week.

TABLE 1
DEERHOME, RED DEER, ALBERTA
MOVEMENT OF POPULATION DURING 1964

	M	F	T	M	F	T
In residence 1st January, 1964				512	446	958
ADMISSIONS:						
From P.M.H., Ponoka	2	4	6			
From P.T.S., Red Deer	3	6	9			
From P.M.I., Edmonton	8	2	10			
Direct	21	20	41			
Re-admitted	3	5	8			
Returned from L.O.A.	187	106	293			
	224	143	367	224	143	367
				736	589	1325
SEPARATIONS:						
Formal Discharges	7	3	10			
On L.O.A.	203	118	321			
Deaths	6	7	13			
To P.M.H., Ponoka .....	....	2	2			
To P.T.S., Red Deer .....	....	....	....
To P.M.I., Edmonton	3	2	5			
Elopements .....	....	....	....
	219	132	351	219	132	351
Total in Residence 31st December, 1964				517	457	974

TABLE 2
DEERHOME, RED DEER, ALBERTA
ORIGINAL DIAGNOSIS ON ADMISSION TO MENTAL HOSPITAL

Idiocy	140
Imbecile	422
Moron	223
Borderline intelligence	19
Mongol	59
Mental deficiency, unspecified	14
Mental deficiency with Psychoneurosis	1
Mental deficiency with Psychosis:	
Idiot	2
Imbecile	28
Moron	44
Borderline	2
Other	51
Schizophrenia	127
Manic Depressive	53
Psychosis with Convulsant Disorder	4
Traumatic Psychosis	9
Epilepsy	1
Congenital Syphilis	10
Neurosyphilis	2
Syphilis	2
	1
	<u>1,087*</u>

*This total includes 113 patients who were on L.O.A. from Deerhome on 31st December, 1964.

DEPARTMENT OF PUBLIC HEALTH

TABLE 3

DEERHOME, RED DEER, ALBERTA
CAUSES OF DEATH DURING 1964
ABRIDGED INTERNATIONAL CLASSIFICATION

DISEASE	Male	Female	Total
Other diseases of heart	2	....	2
Pneumonia .....	....	4	4
Bronchitis .....	....	1	1
Arteriosclerotic and Degenerative Heart Disease .....	....	1	1
Cirrhosis of liver	1	....	1
Malignant Neoplasms .....	....	1	1
Ulcer of stomach and duodenum	1	....	1
Vascular lesions affecting nervous system	1	....	1
Intestinal obstruction and hernia	1	....	1
	<u>6</u>	<u>7</u>	<u>13</u>

TABLE 4

DEERHOME, RED DEER, ALBERTA
CLASSIFICATION OF DEATHS ACCORDING TO ORIGINAL PSYCHIATRIC
DIAGNOSIS—1964

DISEASE	Male	Female	Total
Mental deficiency	4	3	7
Mental deficiency with Psychosis	1	1	2
Psychosis with Huntington's Chorea .....	....	2	2
Psychosis with Convulsive Disorder .....	....	1	1
Schizophrenia	1	....	1
	<u>6</u>	<u>7</u>	<u>13</u>

LINDEN HOUSE, RED DEER
(FOR EMOTIONALLY DISTURBED CHILDREN)

This project has now operated for five years. Reports from parents of discharged children from Linden House continue to be favourable. In 1964 fifteen children were admitted and 12 children were discharged. Two children were transferred to the Provincial Training School.

The nature of the treatments, techniques, activities and observations are described in detail in the Annual Report which follows:

It was decided that the success of this project warranted the continuation of services which the unit was in a position to provide.

LINDEN HOUSE FIFTH ANNUAL REPORT RED DEER

**L. J. le Vann, L.R.C.P. Edin., L.R.C.S. Edin., L.R.F.P.S. Glas.,
Superintendent**

INTRODUCTION

Linden House has been functioning since January, 1960, and in view of the fact that some five years of operation have been achieved and basic policy crystallized, the "pilot-project" concept has now reached some measure of maturity and the Unit has achieved a more stable therapeutic approach with greater delineation of permanent characteristics as a result of this experience.

IN RESIDENCE, ADMISSIONS, RE-ADMISSIONS, TRANSFERS, DISCHARGES

There were 15 children admitted to Linden House during the year, one of whom was a re-admission for a summer re-assessment period. Two children were transferred from Linden House to the Provincial Training School when it was clearly determined that their problem was one of limited intelligence rather than emotional disturbance or psychoses of childhood. 12 children were discharged, seven males and five females, of which four boys were placed away from their original homes and five girls returned to their homes.

REQUESTS FOR ADMISSION

Nine applications for admission were received during the year from which seven children were selected; four males and three females. The areas of requests this year again were proportionately higher from the Edmonton area (6), Calgary (1), Lethbridge (2). There were no children seen at the Guidance Clinic in Red Deer for whom admission to Linden House was regarded as necessary.

Of the two children who were not admitted, it was generally agreed in Conference that they would not be suitable in the Linden House setting since their problems appeared to be essentially that of dull or below average intelligence, coupled with unsuitable environmental factors rather than emotional disturbance.

THERAPY PROGRAM FOR CHILDREN

The therapy program remained relatively static and a more complete program was organized around group as well as individual therapy sessions. It was found that many of the children with adequate intelligence who arrived at Linden House throughout the years, have been singularly lacking in concepts of morality or ethical relationships. On this basis, three group therapy sessions operated every week to which the children contributed by open discussions of ethical relationships, philosophical concepts that have been regarded as useful in human society, as well as the weekly Children's Parliament on Saturday, during which they were encouraged to voice constructive criticism with respect to activities that had transpired during the week.

Many interesting conclusions have been drawn by the children over the years during these group therapy programs and they undoubtedly proved invaluable in creating peer esteem and self-criticism.

Linden House continued to draw upon the nurses in-training at the Provincial Training School for nursing care and supervision of the children there and this has provided nursing care of a sympathetic nature and good quality.

During the year, six children attended the regular City of Red Deer Schools. Two were subsequently withdrawn; one, an epileptic child at her own request and the other, a boy, who was falling behind in his school work due to limited intelligence who required almost individual tutorial help.

Two teachers employed at Linden House continued to give remedial instruction to the children who were admitted and who were, in almost every instance, behind in their age-group in school work.

It should be noted that Linden House continued to admit children who are regarded as extremes in behaviour in the community, yet despite this, the Unit was able to operate under the "open door" policy.

TRAINING PROGRAM FOR NURSES AND ATTENDANTS

This program was basically carried out at the Provincial Training School where lectures in anatomy, physiology, psychology, psychiatry, medical and surgical diseases, mental deficiency and general nursing was taught.

Bi-weekly meetings continued to be held with the therapy and senior staff as well as the more junior nursing staff on the villa, to discuss the children's problems, review case histories and make any comments or observations in the care of the children which were of concern to the staff members attending these meetings. It is believed these meetings helped nursing staff to cope with the unusual and unpredictable situations which some of the more recent, less settled, children brought to Linden House upon arrival.

STAFF CHANGES AND ACTIVITIES

The staff complement of psychologists and social workers was maintained. The senior psychologists were also employed to give nursing lectures in psychology, psychological assessment of the children at the Provincial Training School and in addition, carried a case-load at the Red Deer Provincial Guidance Clinic.

HEALTH OF CHILDREN AND STAFF

Other than a mild outbreak of measles this year, as last year, good health was generally maintained by all the children and also, without exception, all gained weight.

EXTRA MURAL ACTIVITIES

The children at Linden House presented a play at the annual Christmas concert. They participated in swimming activities at the City pool once a week, attended cinema performances both in town and at the School Recreation Hall, visited the Calgary Zoo and spent some time at the Dr. Randall R. MacLean camp at Gull Lake.

All children took part in recreation activities which included the usual outdoor sports such as baseball, volleyball, football and skating.

A limited number of the psychotic children also attended occupational therapy sessions.

VISITING BOARD AND VISITORS

Linden House was visited by the Honorable Dr. J. Donovan Ross, Minister of Health for the Province of Alberta, Dr. Randall R. MacLean, Director of the Division of Mental Health and many university groups of both under-graduate and post-graduate students. Groups of school teachers and all senior medical students from the University of Alberta attended here for complete tours and clinical demonstrations.

HOMEGOINGS

11 children spent periods at home during the Easter holidays, 14 children went home for summer holidays and 14 children spent the Christmas holiday at home as well.

OBSERVATIONS AND RECOMMENDATIONS

It is generally concluded that many children at Linden House remained here largely because inadequate facilities existed in finding homes for them.

In almost every case, with few exceptions, the children who were admitted with a diagnosis of anti-social or faulty school behaviour, settled very quickly in the more stable environment provided at Linden House. In some instances, children were retained here to a point where they became so accustomed to what, in some measure, came to be a highly protective way of life, so that when their time for departure approached, they developed many anxiety phenomena. One must continue to recommend that the need for a convalescent stage foster home area is still desirable for the child who has been at Linden House, once the acute phase of their disability has been overcome. Any further developments in the Emotionally Disturbed Children's program should give this high priority. This would diminish the need to continue retention of some children in an institutional setting long beyond the necessary time.

APPRECIATION

One would like to thank the Honorable Dr. J. Donovan Ross, Minister of Health for the Province of Alberta, for the sympathy and consideration with which he has always viewed Linden House's requirements; to Dr. Randall R. MacLean, Director of the Division of Mental Health, who has continued to place his wisdom and wide experience at the Unit's disposal, and, finally, to the staff at Linden House who were daily called upon to cope with situations which could only be solved by patient, kindly resourcefulness.

TABLE 1
LINDEN HOUSE, RED DEER, ALBERTA
MOVEMENT OF POPULATION

	M	F	T	M	F	T
Children on Books of Linden House as at 1st January, 1964	12	6	18			
ADMISSIONS:						
First admissions—voluntary	7	7	14			
Re-admissions	1	...	1			
Transfers .....	...	...	...
Total number of admissions	8	7	15	8	7	15
Total Number of Children on books during 1964	20	13	33			
SEPARATIONS:						
Discharges	7	5	12			
Transfers	1	1	2			
2 to P.T.S., Red Deer .....	...	...	...
Total number of separations	8	6	14	8	6	14
Children on Books of Linden House at 31st December, 1964	12	7	19			

TABLE 2
LINDEN HOUSE, RED DEER, ALBERTA
MENTAL STATUS OF FIRST ADMISSIONS, RE-ADMISSIONS AND TRANSFERS

Mental Status	First Admissions			Re-admissions			Transfers			Totals		
	M	F	T	M	F	T	M	F	T	M	F	T
Mental Deficiency:												
Moderate	1	...	1	...	...	...	...	...	...	1	...	1
Severe	1	1	2	...	...	...	...	...	...	1	1	2
Adjustment Reaction of												
Childhood	3	2	5	...	...	...	...	...	...	3	2	5
Neurotic Traits .....	...	1	1	...	...	...	...	...	...	...	1	1
Conduct Disturbance	1	...	1	...	...	...	...	...	...	1	...	1
Conduct Disturbance compli-												
cated by Epilepsy .....	...	1	1	...	...	...	...	...	...	...	1	1
Organic Defects .....	...	...	...	1	...	1	...	...	...	1	...	1
Psychotic Disorders, Other												
and Unspecified .....	...	1	1	...	...	...	...	...	...	...	1	1
Schizophrenic Reaction,												
Childhood Type .....	...	1	1	...	...	...	...	...	...	...	1	1
Normal Child	1	...	1	...	...	...	...	...	...	1	...	1
TOTALS	7	7	14	1	...	1	...	...	...	8	7	15

TABLE 3
LINDEN HOUSE, RED DEER, ALBERTA
AGE GROUP OF FIRST ADMISSIONS, RE-ADMISSIONS AND TRANSFERS

Age Group	First Admissions			Re-admissions			Transfers			Totals		
	M	F	T	M	F	T	M	F	T	M	F	T
5 - 7	2	1	3	...	...	...	...	...	...	2	1	3
8 - 9	3	1	4	...	...	...	...	...	...	3	1	4
10 - 12	1	5	6	1	...	1	...	...	...	2	5	7
13 - 14	1	...	1	...	...	...	...	...	...	1	...	1
TOTALS	7	7	14	1	...	1	...	...	...	8	7	15

THE EUGENICS BOARD

The Eugenics Board for the Province of Alberta held fourteen meetings during the year 1964. These meetings were held at the Provincial Mental Institute, Edmonton, the Provincial Mental Hospital, Ponoka, the Provincial Training School, Red Deer, and Deerhome, Red Deer. The dates of the meetings held during 1964 were as follows:

February 6th, 1964	—	The Provincial Mental Institute, Edmonton
February 7th, 1964	—	The Provincial Mental Hospital, Ponoka
February 7th, 1964	—	The Provincial Training School, Red Deer
May 6th, 1964	—	The Provincial Mental Institute, Edmonton
May 7th, 1964	—	The Provincial Mental Hospital, Ponoka
May 7th, 1964	—	Deerhome, Red Deer
May 7th, 1964	—	The Provincial Training School, Red Deer
October 8th, 1964	—	The Provincial Mental Institute, Edmonton
October 9th, 1964	—	The Provincial Mental Hospital, Ponoka
October 9th, 1964	—	The Provincial Training School, Red Deer
October 9th, 1964	—	Deerhome, Red Deer
December 10th, 1964	—	The Provincial Mental Institute, Edmonton
December 11th, 1964	—	Deerhome, Red Deer
December 11th, 1964	—	The Provincial Training School, Red Deer.

The Board considered a total of 106 cases, all of whom were passed for surgery. Of the 106 cases which were passed by the Board in accordance with The Sexual Sterilization Act (1955-C.311, S.5), 43 were male and 63 female. Of this number 23 were passed subject to their own consent.

Of the 106 cases passed by the Board during the year, 76 had first been examined at a Provincial Guidance Clinic, although some of these had been institutionalized prior to presentation. This group of 76 cases was made up of 36 males and 40 females.

OPERATIONS

Operations were performed on 81 cases during the year, 37 being male and 44 female. All of these operations were performed at the Provincial Mental Institute, Edmonton, the Provincial Mental Hospital, Ponoka, and the Provincial Training School, Red Deer.

The surgical operations mentioned above were performed by the surgeons of the Board, Dr. J. Ross Vant, of Edmonton, and Dr. R. M. Parsons, of Red Deer.

Dr. William R. Fraser of Calgary, member of the Board, died on June 25th, 1964. He had served on the Board since April 1st, 1955.

Dr. Arthur V. Follett of Calgary was appointed to the Board as of June 25th, 1964, the first meeting following his appointment being on October 8th, 1964.

APPRECIATION

As in previous years, the Eugenics Board wishes to express thanks and sincere appreciation to the Director, Division of Mental Health, to the Medical Superintendents and their staffs, to the surgeons, and to the Guidance Clinics, for their co-operation in connection with the work of the Board.

TABULAR SUMMARY

A tabular summary of the work of the Provincial Eugenics Board to December 31st, 1964, is appended.

CASES PRESENTED AND PASSED

(To December 31, 1964)

Years	YEARLY TOTALS			CUMULATIVE TOTALS		
	Male	Female	Totals	Male	Female	Totals
1929-1933	87	201	288	87	201	288
1934-1938	557	438	995	644	639	1283
1939-1943	339	299	638	983	938	1921
1944-1948	237	311	548	1220	1249	2469
1949-1953	187	239	426	1407	1488	2895
1954	41	40	81	1448	1528	2976
1955	61	48	109	1509	1576	3085
1956	38	34	72	1547	1610	3157
1957	46	82	128	1593	1692	3285
1958	116	71	187	1709	1763	3472
1959	32	62	94	1741	1825	3566
1960	37	65	102	1778	1890	3668
1961	44	75	119	1822	1965	3787
1962	48	71	119	1870	2036	3906
1963	45	80	125	1915	2116	4031
1964	43	63	106	1958	2179	4137

OPERATIONS ONLY

(To December 31, 1964)

Years	YEARLY TOTALS			CUMULATIVE TOTALS		
	Male	Female	Totals	Male	Female	Totals
1929-1933	48	158	206	48	158	206
1934-1938	198	240	438	246	398	644
1939-1943	122	151	273	368	549	917
1944-1948	87	124	211	455	673	1128
1949-1953	84	162	246	539	835	1374
1954	37	25	62	576	860	1436
1955	45	25	70	621	885	1506
1956	22	24	46	643	909	1552
1957	49	33	82	692	942	1634
1958	54	53	107	746	995	1741
1959	40	50	90	786	1045	1831
1960	21	48	69	807	1093	1900
1961	53	52	105	860	1145	2005
1962	33	65	98	893	1210	2103
1963	31	61	92	924	1271	2195
1964	37	44	81	961	1315	2276

NATIONAL HEALTH GRANTS

Since 1948 the Federal Government has made a series of Health Grants available to the provinces. These relate to various specific problems such as General Public Health, Venereal Disease Control, Hospital Construction, etc. Within these grants the province may prepare a project in which it is proposed that a new health service may be financed. If the project comes within the terms of the federal regulations, it is approved by the federal authorities and the money becomes available to reimburse the province for its expenditure.

In most of the grants the project covers the entire cost of the service as outlined in the project but it is required by the federal authorities, that their grant be matched in certain Grants, Cancer Control, Hospital Construction, etc.

The following table shows the amount of these grants for 1964/65, the amount that was committed under the various projects, the amount actually expended and the percentage of the various grants that was expended.

NATIONAL HEALTH GRANTS

ALBERTA

1964-65

Grant	Amount of Grant	Amount Committed	Amount Expended	Percentage of Grant Expended
Professional Training	\$ 142,794.00	\$ 139,278.48	\$ 135,460.60	94.9%
Hospital Construction	2,611,199.00	2,604,666.48	2,522,749.81	96.6%
Mental Health	657,479.00	657,479.00	657,479.00	100.0%
Tuberculosis Control	209,723.00	209,723.00	209,723.00	100.0%
General Public Health	1,135,468.00	1,135,468.00	1,135,468.00	100.0%
Cancer Control	262,588.00	262,588.00	262,588.00	100.0%
Medical Rehabilitation and Crippled Children	197,474.00	100,003.50	75,942.00	38.4%
Child and Maternal Health	137,411.00	115,381.00	81,915.74	59.6%
	<u>\$5,354,136.00</u>	<u>\$5,224,587.46</u>	<u>\$5,081,326.15</u>	<u>86.1%</u>

NOTE: The Hospital Construction Grant is an accumulative grant and new projects under planning will eventually use up all available funds.

CANADIAN RED CROSS BLOOD TRANSFUSION SERVICE IN ALBERTA

D. I. Buchanan, M.D., D.P.H., (Edmonton)

M. J. Tuttle, M.D., F.R.C.P.(C.), (Calgary)

It is a pleasure to report that 72,293 voluntary donors attended clinics in Alberta during 1964, a great improvement over last year. The exact statistics are given in Table 1.

TABLE 1
BOTTLES COLLECTED, 1964

Jan. 1 to Dec. 31 (inclusive)	Permanent and City Mobiles	Field Mobile Clinics		
Northern Alberta	20,673	16,807	=	37,480
Southern Alberta	18,779	16,034	=	34,813
Total	39,452	32,841		72,293

BLOOD TRANSFUSIONS

The number of bottles of blood administered to hospital patients in the large areas covered by both the Alberta Depots also increased by over 3,200 units of blood, and further details are listed in Table 2.

TABLE 2
TRANSFUSIONS OF WHOLE BLOOD, 1964

Jan. 1 to Dec. 31 (inclusive)	Blood Transfusions Administered	Patients Transfused
Northern Alberta	26,205½	11,611
Southern Alberta	19,359	9,512
Total	45,564½	21,123

It will be recalled that, after discussions with the Honourable Dr. J. D. Ross in Edmonton, crossmatching was first performed in the University of Alberta Hospital and in the Royal Alexandra Hospital in the spring of 1963. The provision of crossmatching facilities in these two large hospitals has resulted in a great saving of voluntary donor blood. This can be emphasized quite clearly in two different ways. First, in 1962 when all crossmatching was still being done in the Edmonton Depot, 11,969½ bottles were issued to the University Hospital, as compared to 10,269 in 1964 when the hospital was completely responsible for its own crossmatching. Thus, there was a direct saving of 1,700½ bottles of blood. In the case of the Royal Alexandra Hospital, 6,187½ bottles were issued in 1962, whereas in 1964, only 4,607 were required, a saving of 1,580½ bottles. Secondly, there was a marked reduction in the percentage of blood returned unused to the Red Cross Depot, this being less than 6½ % for both hospitals and a very marked improvement on any previous year.

Some 90 hospitals are still dependent upon the Edmonton Depot for crossmatching facilities, as well as for their blood supplies, and the Calgary Depot continues to fill the needs of 49 hospitals.

PLASMA

A total of 302 pools of liquid plasma were shipped to the Connaught Laboratories from Edmonton during 1964, and similarly, 316 were sent from Calgary, giving a total of 618 pools from Alberta.

Apart from this, 100 units of fresh frozen plasma were issued from the Calgary Depot and 197 from the Edmonton Depot, these being used mainly in the treatment of hemophilia.

It is a pleasure to report that 246 blood donations for the production of anti-A or anti-B testing serum were sent from Calgary to the National Laboratories, a further 74 having been shipped from Edmonton. In addition, many valuable donations of anti-Rh and similar sera were shipped from Alberta to the National Red Cross Laboratories, there being 83 bottles from Calgary and 14 from Edmonton.

Rh AND ANTENATAL WORK

Apart from the special investigations undertaken in any unusual case involving apparent blood group incompatibility, a total of 38,312 antenatal, postnatal, and related specimens were tested during 1964, as shown in Table 3.

TABLE 3
Rh. AND OTHER INVESTIGATIONS, 1964

Jan. 1 to Dec. 31 (inclusive)	Antenatal Specimens and Others Investigated
Northern Alberta	22,819
Southern Alberta	15,493
TOTAL	38,312

In conclusion, it should be mentioned that Dr. E. W. Nation has been granted leave and that he is presently taking an extensive course in hematology. Dr. M. J. Tuttle has assumed the responsibilities of Acting Medical Director, Calgary Depot.

Both Medical Directors would like to take this opportunity of expressing their appreciation for the help of the many volunteer donors and workers in Alberta and adjoining areas, and we should like to thank each individual member of the Blood Transfusion Service staff for their great contribution to this work.

PART II

ANNUAL REPORT

OF THE

Division of Vital Statistics

OF THE

**DEPARTMENT OF PUBLIC HEALTH
PROVINCE OF ALBERTA**

For The Year 1964

(Sixtieth Annual Report)

CONTENTS

	Page
Summary	1
Population of Census Divisions	10
General Summary of Vital Statistics for Census Divisions	14
General Summary of Vital Statistics for Incorporated Urban Places	15
Deaths by Place of Occurrence and Place of Residence	17
Deaths and Hospital Deaths by Occurrence and Residence for Census Divisions	17
Deaths and Hospital Deaths by Occurrence and Residence for Urban Places	18
Cause of Death by Sex for Census Divisions	19
Cause of Death by Sex for Urban Places	24
Deaths by Cause and Sex, by Age, Alberta	29
Deaths by Cause and Sex, by Age, Edmonton	38
Deaths by Cause and Sex, by Age, Calgary	45
Deaths by Cause and Sex, by Marital Status and Age, and Month of Death, Alberta	52
Deaths by Cause, Sex and Month of Death, Alberta	60
Infant Deaths for Census Divisions	65
Infant Deaths for Urban Places	66
Causes of Infant Deaths by Sex and Age	67
Causes of Infant Deaths by Sex and Calendar Month of Death	69
Deaths According to International Intermediate List	71
Death Rates per 100,000	77
Cause of Death by Numbers and Rates of the Last Decennial Year	83
Deaths of Indians	84
Deaths of Registered Indians	90
Causes of Deaths, Infant Indians	96
Causes of Infant Death Registered Indians by Sex and Age	97
Live Births of all Indians	98
Live Births of Indians by Age of Parents	99
Live Births of Registered Indians by Age of Parents	100
Birth by Place of Occurrence	101
Live Births for Census Divisions	102
Live Births for Urban Places	103
Live Births by Month	104
Live Births for Census Divisions by Type of Attendance	104
Live Births in Urban Places by Type of Attendance	105
Live Births by Ages of Parents	106
Live Births by Age of Mother	107
Multiple Births	109
Live Births by Period of Gestation and Birth Weight, Alberta	111
Live Births by Age of Mother and Birth Weight, Alberta	113
Marriages by Months	115
Marriages by Ages	116
Marriages by Marital Status	117
Marriages by Birth Places	118
Marriages by Religious Denominations	119
Stillbirths	121
Ratio of Male to Female Births	121
Divorces	122
Population, Births, Marriages, Deaths and Rates for Years 1905-1964	123

DEFINITIONS

- Infant deaths —deaths under 1 year of age.
- Neo-natal —deaths under 28 days (4 weeks) of age.
- Maternal —deaths due to delivery and complications of pregnancy, childbirth and the puerperium (Categories 640 - 689 International List).
- Stillbirths —foetal deaths of 28 or more weeks' gestation.
- Perinatal deaths—foetal deaths of 28 or more weeks' gestation plus infant deaths under 7 days (1 week) of age.
- Natural increase—excess of births over total deaths. (Death figures do not include stillbirths.)

RATES

(Unless otherwise indicated computed as follows)

Per 1,000 population; Live births, deaths, natural increase, marriages.

Per 100,000 population; Causes of death, divorces.

Per 1,000 live births; Infant and neo-natal deaths, stillbirths.

Per 10,000 live births; Maternal deaths.

Per 1,000 total births (live- and still-born): Perinatal deaths.

DIVISION OF VITAL STATISTICS

J. COLVILLE, Director

INTRODUCTION

It will be noted in this report for the year 1964 there are minor decreases in the death and maternal death rates, a moderate decrease in the birth rate, slight decreases in the marriage, stillbirth, infant death, neo-natal death, perinatal death rates and a significant increase in the divorce rate compared to those for the year 1963. The rate of natural increase, excess births over deaths, decreased from 20.7 to 18.7 and this is a reflection of the decrease in the birth rate.

POPULATION

The population of the Province for the year 1964 has been estimated by the Dominion Bureau of Statistics at 1,432,000, an increase of 27,000 or approximately 2 percent over that of the previous year. All rates in the report are, therefore, based on this figure. Commencing on page 10, is a table of population by census divisions classified by municipalities for the years 1956 and 1961 and between pages 8 and 9, a map of the Province by census divisions. A table showing the estimated population by sex and age group is printed on page 13.

BIRTHS

The number of children born to residents of the Province during 1964 was 36,169 of which 36,124 occurred within the Province. Of the births to residents, 18,510 were males and 17,659 females, giving a sex ratio of 1,048 male to 1,000 female births. During the last decade, there has been a gradual yearly decline in the birth rate and this year's decrease of 2.1 percent under last year's rate is the largest yearly decline during the period. The birth rate for 1964 was 25.3 per 1,000 population as compared to 27.4 for the previous year. Of the total births to residents, 24,965 or 69 percent took place in the cities, 35,802 or 99 percent were delivered in hospitals and 35,774 or 98.8 percent were attended by doctors. The total number of illegitimate births increased from 2,741 in 1963 to 2,991 in 1964 with a corresponding percentage increase from 7.1 to 8.2. Of the total illegitimate births 1,637 or 54 percent were born to mothers twenty-one years of age and under. The births of 2,243 Indians are included in the total number of births.

The number of births to residents of cities in the Province were as follows: Calgary, 7,651; Camrose, 202; Drumheller, 105; Edmonton, 8,397; Grande Prairie, 384; Lethbridge, 768; Medicine Hat, 541; Red Deer, 683; Wetaskiwin, 137.

The following table shows the most recent birth rates for Canada and certain other Countries:

Canada	23.5	Ireland (Republic)	22.5
Newfoundland	29.9	United States	21.2
Prince Edward Island	25.5	Australia	20.6
Nova Scotia	24.1	New Zealand	24.1
New Brunswick	24.9	Denmark	17.6
Quebec	23.5	Finland	17.6
Ontario	23.2	France	18.1
Manitoba	22.7	Italy	20.0
Saskatchewan	24.1	Austria	18.5
Alberta	25.3	Norway	17.9
British Columbia	20.7	Netherlands	20.7
Yukon	32.1	Portugal	23.7
Northwest Territories	50.5	Spain	22.2
England and Wales	18.4	Sweden	16.0
Scotland	20.0	Switzerland	19.2
Northern Ireland	23.6	Western Germany	18.2

MARRIAGES

A total of 10,634 marriages were recorded in 1964 which is the highest number recorded in the history of the Province for a single year. This is an increase of 471 over the previous year with a corresponding increase in the rate from 7.2 to 7.4. The marriage rate of the Province has been constantly high for a considerable number of years and this year's rate of 7.4 corresponds favourably with the rate for Canada of 7.2. Of the total marriages, bachelors married 8,778 spinsters, 231 widows and 449 divorcees; widowers married 90 spinsters, 222 widows and 48 divorcees; divorced men married 426 spinsters, 100 widows and 290 divorcees. Of the grooms, 9 were sixteen years of age and 58 were seventy-five years of age and over, and of the brides, 387 were sixteen years of age and under and 9 were seventy-five years of age and over.

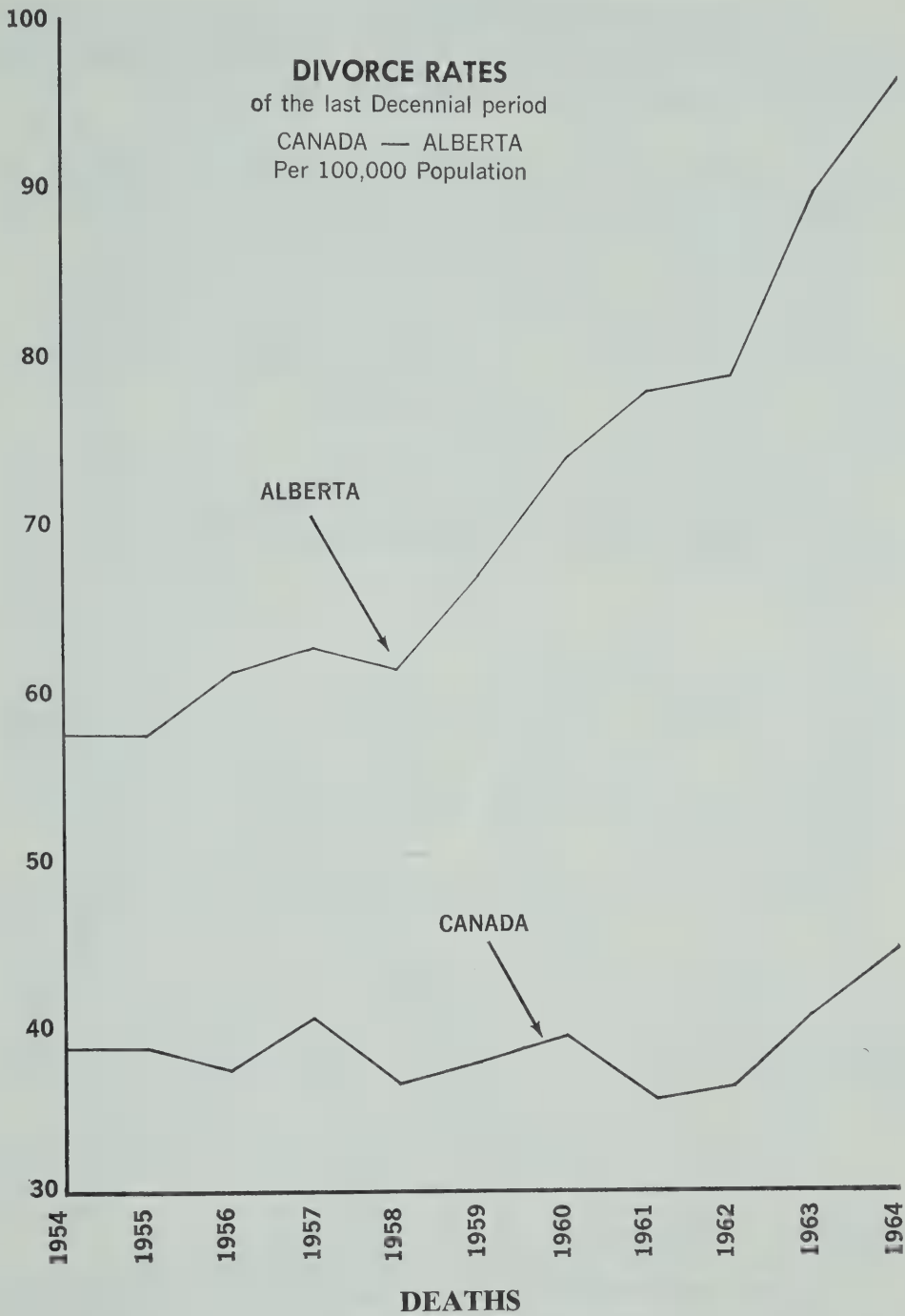
The number of marriages registered in the cities of the Province were as follows: Calgary, 2,470; Camrose, 94; Drumheller, 67; Edmonton, 3,136; Grande Prairie, 127; Lethbridge, 367; Medicine Hat, 265; Red Deer, 264; Wetaskiwin, 74.

The following table shows the most recent rates of marriage for Canada and certain other Countries:

Canada	7.2	Ireland (Republic)	5.6
Newfoundland	6.9	United States	9.0
Prince Edward Island	6.2	Australia	7.7
Nova Scotia	7.0	New Zealand	8.0
New Brunswick	7.5	Denmark	8.4
Quebec	7.1	Finland	7.5
Ontario	7.4	France	7.2
Manitoba	7.1	Italy	8.2
Saskatchewan	6.8	Austria	8.0
Alberta	7.4	Norway	6.5
British Columbia	7.0	Netherlands	8.5
Yukon	5.9	Portugal	8.0
Northwest Territories	6.9	Spain	7.4
England and Wales	7.6	Sweden	7.5
Scotland	7.7	Switzerland	7.5
Northern Ireland	7.3	Western Germany	8.7

DIVORCES

A total of 1,389 dissolutions of marriage and 11 decrees of nullity were granted in 1964 as compared to 1,268 dissolutions of marriage and 14 decrees of nullity for the previous year. The rate of divorce per 100,000 population was 97 as compared to 90.2 for 1963. Of the total divorces, 499 were granted to husbands and 890 to wives and of the nullities, 5 to husbands and 6 to wives.



A total of 9,518 deaths were recorded in the Province for 1964 of which 9,482 were to residents. Of the deaths to residents, 6,044 were males and 3,438 were females, giving a sex ratio of 1,000 females to 1,845 males. During 1964 approximately 2 males died to every 1 female. The greatest loss of life occurs at the beginning and towards the end of the life span and during 1964, 865 of the deaths were of infants under one year of age and 5,511 of persons sixty-five years of age and over. The greatest number of deaths registered for a single month, occurred in the month of March when 895 deaths were registered. The deaths of 310 Indians are included in the total number of deaths. The death rate for 1964 was 6.6 as compared to 6.7 in 1963.

For a considerable number of years the five leading causes of death in order of standing have been, diseases of the heart, cancer, vascular lesions affecting the central nervous system, accidents — violence and pneumonia and the same order prevailed for the year 1964.

There were 2,995 deaths assigned to diseases of the heart, an increase of 105 over the previous year. The rate per 100,000 population was 208 compared to 205 for 1963. Of the total deaths assigned to this cause, 2,210 were of decedents sixty-five years of age and over.

Cancer accounted for 1,614 deaths, a decrease of 1 from the previous year. The rate per 100,000 population was 112 as compared to 114 for the year 1963. Cancer generally is a disease of old age and of the total deaths assigned to this cause, 898 were of decedents sixty-five years of age and over.

Vascular lesions affecting the central nervous system were responsible for 899 deaths, a decrease of 94 from the previous year. The rate per 100,000 population was 62 as compared to 70 for 1963. Approximately 89 percent of the deaths were to persons sixty-five years of age and over.

Violent and accidental deaths numbered 1,002 as compared to 893 for the previous year. The overall increase of 109 deaths in this group was principally due to an increase in the number of deaths from motor vehicle accidents, fire and explosion of combustible material and suicides. The rate per 100,000 population was 69 as compared to 62 for 1963. During 1964 there were approximately 3 male to every female death in this category.

Deaths in this group were made up as follows: motor vehicle accidents—371; other transport accidents—29; accidental poisoning—48; accidental falls—105; accidents caused by machinery—29; accidents caused by fire and explosion of combustible material—72; accidents caused by hot substance, corrosive liquid, steam and radiation—1; accidents caused by firearm—17; accidental drowning—49; all other accidents—102; suicides—157; homicides and injury purposely inflicted by other persons—22.

The number of deaths registered in the cities of the Province were as follows: Calgary, 2,088; Camrose, 175; Drumheller, 61; Edmonton, 1,884; Grande Prairie, 66; Lethbridge, 287; Medicine Hat, 255; Red Deer, 137; Wetaskiwin, 81.

The following table shows the most recent rates of death for Canada and certain other Countries:

Canada	7.6	Ireland (Republic)	11.4
Newfoundland	6.2	United States	9.4
Prince Edward Island	9.2	Australia	9.0
Nova Scotia	8.4	New Zealand	8.8
New Brunswick	7.7	Denmark	9.9
Quebec	6.8	Finland	9.3
Ontario	7.9	France	10.7
Manitoba	8.1	Italy	9.6
Saskatchewan	7.8	Austria	12.3
Alberta	6.6	Norway	10.0
British Columbia	9.2	Netherlands	7.7
Yukon	5.4	Portugal	10.2
Northwest Territories	8.6	Spain	8.7
England and Wales	11.3	Sweden	10.0
Scotland	11.7	Switzerland	9.4
Northern Ireland	10.5	Western Germany	11.0

MATERNAL DEATHS

There were 8 maternal deaths registered during the year, which is 3 less than for the previous year. The rate being 2.2 as compared to 2.9 for the year 1963.

The following table shows the most recent rates of maternal deaths for Canada:

MATERNAL DEATH RATES PER 10,000 LIVE BIRTHS

Canada	3.0	Ontario	2.8
Newfoundland	4.1	Manitoba	1.8
Prince Edward Island .....	....	Saskatchewan	2.2
Nova Scotia	4.9	Alberta	2.2
New Brunswick	6.5	British Columbia	0.6
Quebec	3.8		

INFANT DEATHS

Deaths of children under one year of age numbered 865 as compared to 908 for the previous year. The rate per 1,000 live births was 23.9 as compared with 23.6 for the previous year. Of the total deaths, 518 were males and 347 females, giving a sex ratio of 1,492 males to 1,000 females.

INFANT MORTALITY RATES PER 1,000 LIVE BIRTHS

Canada	24.7	Ireland (Republic)	26.8
Newfoundland	31.1	United States	24.2
Prince Edward Island	26.4	Australia	19.1
Nova Scotia	25.3	New Zealand	19.1
New Brunswick	26.1	Denmark	18.7
Quebec	27.4	Finland	16.9
Ontario	21.3	France	23.4
Manitoba	25.5	Italy	35.5
Saskatchewan	26.0	Austria	29.9
Alberta	23.9	Norway	16.7
British Columbia	22.8	Netherlands	14.8
Yukon	38.9	Portugal	67.5
Northwest Territories	69.7	Spain	29.6
England and Wales	20.0	Sweden	13.6
Scotland	24.0	Switzerland	19.0
Northern Ireland	26.3	Western Germany	25.3

STILLBIRTHS

During the year, 450 stillbirths were registered with a gestation period of 20+ weeks, which included 373 stillbirths with a gestation period of 28+ weeks. The stillbirth rate for 28+ weeks gestation was 10.3 as compared to 9.5 for the previous year. A table of stillbirths by sex and period of gestation is printed on page 121.

ADMINISTRATION

The Vital Statistics Act, The Solemnization of Marriage Act and the Regulations providing for the licensing of embalmers are administered by the Director of The Division of Vital Statistics.

Under the provisions of The Vital Statistics Act the administrative procedure necessary for matters of civil registration is provided. There are approximately 170 District Registrars located in the larger centres of the Province whose duties are to acquire the registration of each vital event (birth, stillbirth, marriage and death) which occurs within their districts for recording and transmission to this Division on a weekly basis. In addition, decrees of dissolution and annulments of marriages, adoptions and legal changes of names are received for recording. All registrations are edited, etc., arranged and bound in a systematic manner and continuous indexes prepared. Certified copies, photocopies of original registrations, certified extracts, certificates and verifications are

issued to applicants or agencies upon receipt of the prescribed fee. Verifications and photocopies of registrations are also supplied free of charge to other government departments and certain authorized agencies.

Listed below is a summary of work processed under the provisions of The Vital Statistics Act during 1964:

Births registered	36,145
Stillbirths registered	457
Marriages registered	10,641
Deaths registered	9,554
Certificates of birth issued	61,749
Certificates of marriage issued	19,559
Certificates of death issued	6,263
Searches	529
Legal Changes of Names recorded	509
Legal Changes of Christian Names recorded	561
Legitimations	240
Delayed Registrations of birth and marriage	979
Adoptions registered	2,015

Under The Solemnization of Marriage Act, the Division provides administrative procedure for the appointment of marriage licence issuers, marriage commissioners and the registration of clergymen authorized to perform marriages in the Province. Approximately 145 marriage licence issuers are located in the larger centres of the Province, whose duties are to issue marriage licences and certificates of publication of banns in accordance with the provisions of The Solemnization of Marriage Act.

The following summary shows work processed under the provisions of The Solemnization of Marriage Act during the year 1964:

Marriage Licences issued	10,600
Certificates of Publication of Banns	62
Clergymen registered	2,590
Marriage Commissioners registered	17

Under the provisions of the Regulations provided for the licensing of embalmers, the Division licenses embalmers and registers apprentice embalmers. During the year 1964, 198 embalmers were licensed and 16 apprentice embalmers registered.

ANNUAL REPORT, 1964

7

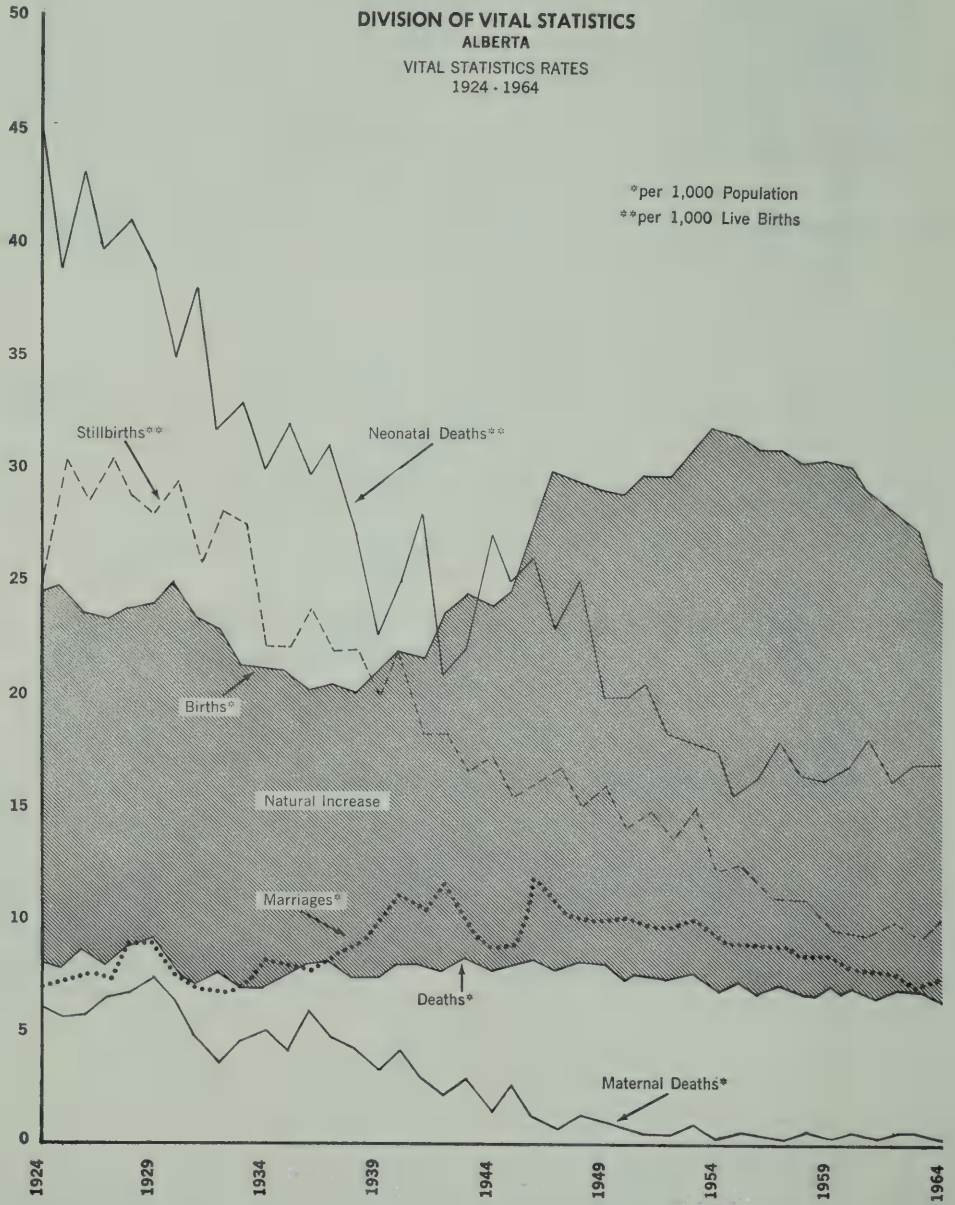
REVENUE AND EXPENDITURE
For the Fiscal Year ending March 31, 1965

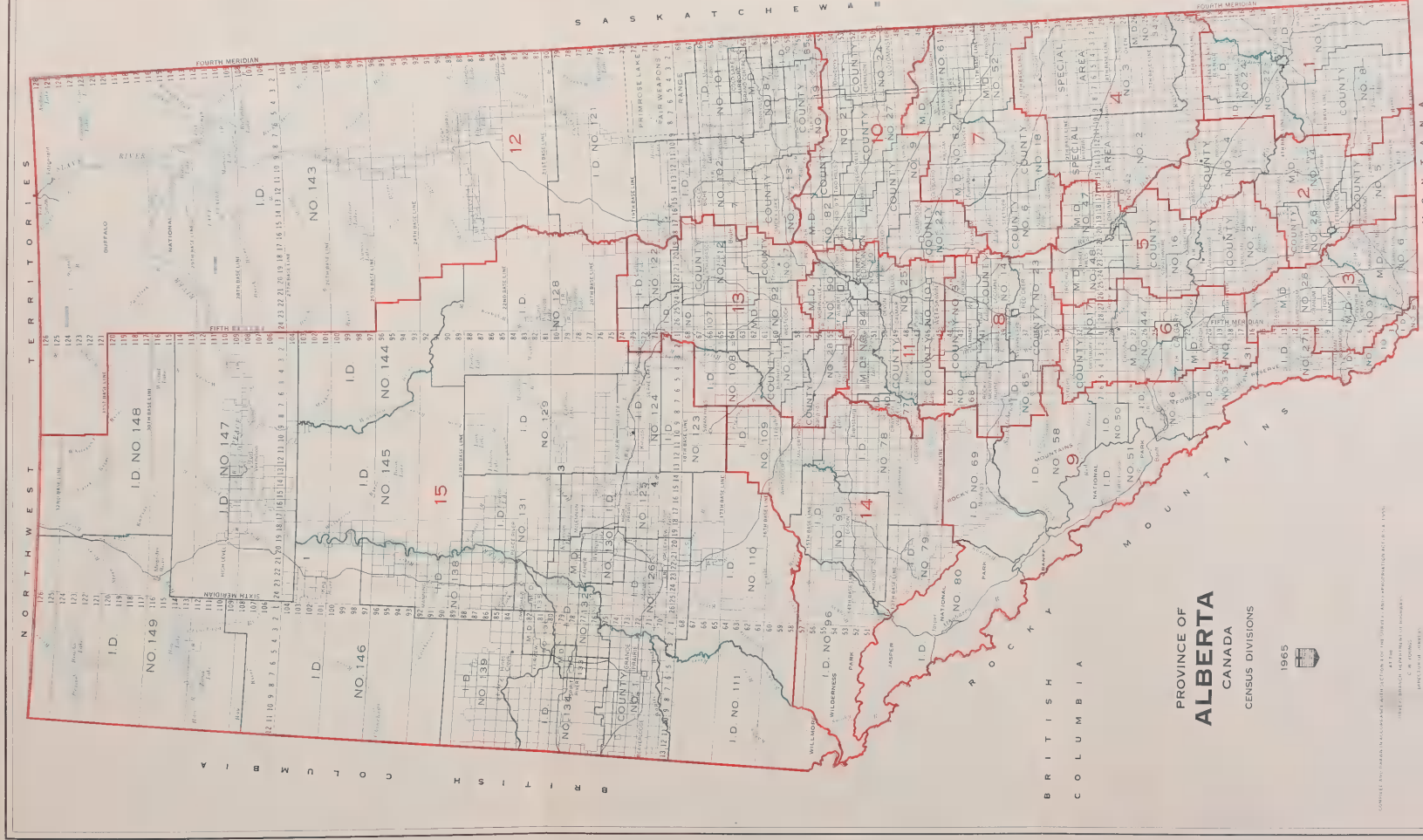
REVENUE

MARRIAGE ACT	
Marriage Licenses	\$ 59,730.50
Publication of Banns	165.00
	<u>\$ 59,895.50</u>
VITAL STATISTICS ACT	
Birth Certificates	\$ 63,238.00
Marriage Certificates	19,720.00
Death Certificates	6,382.00
Certified Copies	1,274.00
Microfilm Transcriptions	6,815.70
Certificates of Authority to Register	1,860.00
Change of Christian Name	550.00
Legitimations	446.00
Embalmers Licenses	1,005.00
Apprentice Embalmers Licenses	45.00
Sundries	4,725.17
	<u>\$106,060.87</u>
TOTAL REVENUE	<u>\$135,956.37</u>

EXPENDITURE

Salaries		\$ 91,440.77
Office Expenditure:		
Printing and Stationery	\$11,841.33	
Furnishings, Equipment and Tools .....	.....
Freight, Express and Cartage	27.19	
Fees and Commissions	9,082.00	
Postage	5,631.25	
Repairs, Office Furnishings and Equipment	3.14	
Repairs, Office Equipment	318.39	
Telephones and Telegraphs	49.86	
Travelling Subsistence	195.00	27,148.16
		<u>\$118,588.93</u>
TOTAL EXPENDITURE		<u>\$118,588.93</u>
SURPLUS REVENUE OVER EXPENDITURE		<u>\$ 47,367.44</u>





PROVINCE OF
ALBERTA
CANADA
CENSUS DIVISIONS

1965



DIVISIONS OF ALBERTA FOR CENSUS AND VITAL STATISTICS PURPOSES

As the Province of Alberta is not completely divided into counties, and the political divisions are not permanently fixed, it has been found advisable to use smaller areas, the Dominion Census Divisions.

Prior to 1956 the Province was divided into 17 census divisions. However, in 1956 the census division boundaries were completely revised and there are now 15 census divisions. These divisions are further sub-divided into municipal areas. The municipal areas which were each originally within the boundaries of a single census division, have been reorganized by the Provincial authorities into larger units, and now, in many cases, part of the new municipality or improvement district is in one census division and part in another.

The following table shows the census divisions, divided into municipalities, improvement districts, cities, towns and villages with the 1961 and 1956 division population figures.

DEPARTMENT OF VITAL STATISTICS

POPULATION OF CENSUS DIVISIONS OF ALBERTA CLASSIFIED BY MUNICIPALITIES
FOR CENSUS YEARS, 1956 and 1961

Division and Subdivision	Total		Division and Subdivision	Total	
	1961	1956		1961	1956
ALBERTA	1,331,944	1,123,116	Division No. 5	38,115	38,120
Division No. 1	39,140	34,496	42. I.D.—D.A.	4,370	5,502
11. I.D.—D.A.	4,228	4,076	47. Starland	2,907	2,831
22. I.D.—D.A.	553	592	48. Kneehill	7,008	7,055
Forty Mile County No. 8	4,716	4,224	Vulcan County No. 2	5,018	5,087
Army Experimental			Wheatland County No. 16	5,570	5,582
Range, I.D.—D.A.—24	786	863	Indian Reserves	1,612	1,507
Cities:			Cities:		
Medicine Hat	24,484	20,826	Drumheller	2,931	2,632
Towns:			Towns:		
Bow Island	1,122	1,001	Gleichen	426	581
Irvine	240	232	Strathmore	924	727
Redcliff	2,221	2,001	Three Hills	1,491	1,095
Villages:			Vulcan	1,310	1,204
Burdett	229	225	Villages:		
Foremost	561	456	Acme	328	292
Division No. 2	83,306	74,991	Arrowwood	195	240
14. Taber	7,349	6,730	Carbon	371	354
25. Lethbridge	11,184	11,624	Carmanagay	297	299
Newell County No. 4	6,038	5,943	Champion	419	402
Warner County No. 5	4,991	5,157	Cluny	174	197
Cities:			Craigmyle	107	138
Lethbridge	35,454	29,462	Delia	287	282
Towns:			Hussar	213	168
Bassano	815	753	Lomond	244	189
Brooks	2,827	2,320	Milo	167	167
Coaldale	2,592	2,327	Morrin	316	267
Milk River	801	642	Munson	82	82
Picture Butte	978	881	Rockyford	288	226
Raymond	2,362	2,399	Rumsey	123	104
Taber	3,951	3,688	Standard	266	230
Vauxhall	942	713	Trochu	671	680
Villages:			Division No. 6	317,989	237,886
Barons	345	352	31. Foothills	7,896	7,902
Coutts	469		44. Rocky View	10,748	12,788
Duchess	218	177	46. I.D.—D.A.		4,650
Grassy Lake	274	282	Mountain View County		
Nobleford	309	263	No. 17	9,348	9,273
Rosemary	210	158	Indian Reserves	511	478
Stirling	468	430	Cities:		
Tilley	257	240	Calgary	249,641	181,780
Warner	472	450	Towns:		
Division No. 3	30,967	30,426	Black Diamond	1,043	991
6. Cardston	4,905	5,398	Bowness	9,184	6,217
9. Pincher Creek	3,240	3,109	Didsbury	1,254	1,227
26. Willow Creek	4,863	6,344	Forest Lawn	12,263	3,150
Indian Reserves	3,889	3,524	High River	2,276	2,102
Towns:			Montgomery	5,077	
Cardston	2,801	2,607	Okotoks	1,043	764
Claresholm	2,143	2,431	Olds	2,433	1,980
Fort Macleod	2,490	2,103	Sundre	853	923
Granum	290	322	Villages:		
Magrath	1,338	1,382	Airdrie	524	327
Nanton	1,054	1,047	Beiseker	360	321
Pincher Creek	2,961	1,729	Blackie	184	198
Stavely	349	338	Carstairs	665	449
Villages:			Cayley	146	146
Cowley	127	92	Cochrane	857	707
Glenwood	274		Cremona	221	192
Hill Spring	243		Crossfield	593	459
Division No. 4	15,020	14,294	Irricana	167	158
34. Acadia	965	914	Turner Valley	702	704
Special Area No. 2	3,805	3,687	Division No. 7	40,837	40,214
Special Area No. 3	4,994	5,036	52. Provost	3,328	3,621
Towns:			53. Paintearth	3,278	3,515
Hanna	2,645	2,327	61. Wainwright	4,847	4,481
Villages:			62. Flagstaff	6,355	6,806
Cereal	195	154	Stettler County No. 6	5,968	6,061
Chinook	114	154	Buffalo National Park		604
Consort	557	434	Towns:		
Empress	405	480	Castor	1,025	958
Oyen	780	562	Coronation	864	784
Veteran	239	241	Daysland	539	499
Youngstown	321	305	Hardisty	582	628
			Provost	1,022	878
			Stettler	3,638	3,359
			Wainwright	3,351	2,653

POPULATION OF CENSUS DIVISIONS OF ALBERTA CLASSIFIED BY MUNICIPALITIES
FOR CENSUS YEARS, 1956 and 1961 (Continued)

Division and Subdivision	Total		Division and Subdivision	Total	
	1961	1956		1961	1956
Div. No. 7—Continued:			Div. No. 10—Continued:		
Villages:			Beaver County No. 9	6,476	6,883
Alliance	291	313	Elk Island N't'l. Park.	69	56
Amisk	127	151	Cities:		
Big Valley	461	354	Camrose	6,939	5,817
Botha	112	102	Lloydminster (pt.)	2,944	2,506
Chauvin	395	353	Towns:		
Czar	196	153	Mundare	603	650
Donalda	289	256	Tofield	905	800
Edgerton	295	292	Two Hills	826	713
Forestburg	677	552	Vegreville	2,908	2,574
Gadsby	98	145	Vermilion	2,449	2,196
Galahad	231	215	Viking	1,043	897
Halkirk	172	209	Villages:		
Heisler	214		Andrew	601	602
Hughenden	294	212	Bashaw	614	597
Irma	425	421	Bawlf	203	287
Killam	552	524	Bittern Lake	76	45
Lougheed	217	201	Bruderheim	299	290
Rochon Sands	28		Chipman	174	192
Sedgewick	655	608	Derwent	281	289
Strome	311	306	Dewberry	179	
Division No. 8	76,533	64,168	Edberg	179	167
55. Red Deer	13,477	12,830	Ferintosh	174	195
65. I.D.—D.A.	5,532	5,199	Hairy Hill	173	183
68. I.D.—D.A.	124	81	Hay Lakes	233	193
Ponoka County No. 3	8,688	8,611	Holden	556	544
Lacombe County No. 14	8,725	8,351	Innisfree	291	318
Indian Reserves	1,246	1,230	Kitscoty	326	283
Cities:			Lamont	705	632
Red Deer	19,612	12,338	Lavoy	131	127
Towns:			Mannville	632	599
Innisfail	2,270	1,883	Marwayne	379	337
Lacombe	3,029	2,747	Minburn	164	150
Ponoka	3,938	3,387	Myrnam	441	440
Rimbey	1,266	980	New Norway	263	273
Rocky Mtn. House	2,360	1,285	Ryley	469	495
Sylvan Lake	1,381	1,114	Willingdon	429	431
Villages:			Division No. 11	410,679	323,539
Alix	631	517	75. Leduc	10,647	11,497
Bentley	588	536	77. I.D.—D.A.	2,384	3,259
Blackfalds	477	340	83. Strathcona	12,075	8,873
Bowden	437	296	84. Stony Plain	9,238	8,491
Caroline	321	296	Wetaskiwin County		
Clive	251	249	No. 10	8,701	9,466
Delburne	450	429	Sturgeon County No. 15	17,837	13,865
Eckville	580	456	Indian Reserves	2,072	1,786
Elnora	214	177	Cities:		
Gull Lake	40	32	Edmonton	281,027	226,002
Mirror	577	591	Wetaskiwin	5,300	4,476
Penhold	319	213	Towns:		
Division No. 9	20,274	17,239	Beverly	9,041	4,602
8. I.D.—D.A.	80	110	Calmar	700	730
10. I.D.—D.A.	1,844	3,269	Devon	1,418	1,429
27. I.D.—D.A.	133	100	Drayton Valley	3,854	2,588
33. I.D.—D.A.	34	47	Fort Saskatchewan	2,972	2,582
50. I.D.—D.A.	41	75	Jasper Place	30,530	15,957
58. I.D.—D.A.	534	429	Leduc	2,356	2,008
69. I.D.—D.A.	505	152	Lodgepole	508	
946. I.D.—D.A.	3,076	2,456	Morinville	935	957
Banff National Park	4,101	3,069	St. Albert	4,059	1,320
Banff (not incorp.)	3,429	2,518	Stony Plain	1,311	1,098
Jasper National Park	2,902	2,322	Villages:		
Jasper (not incorp.)	2,360	2,105	Betula Beach	7	
Waterton Lakes			Breton	428	
National Park	344	277	Crystal Springs	13	
Indian Reserves	1,441	1,173	Edmonton Beach	20	
Towns:			Entwistle	411	354
Blairmore	1,980	1,973	Gibbons	192	
Coleman	1,713	1,566	Itaska Beach	2	2
Villages:			Kapasiwin	2	
Bellevue	1,323		Lakeview	12	41
Frank	223	221	Legal	524	457
Ghost Lake			Ma-Me-O Beach	142	137
Division No. 10	70,177	71,500	Millet	403	427
63. Camrose	9,041	9,626	New Sarepta	184	
71. Vermilion River	8,862	9,557	Point Allison	6	
72. Minburn	6,181	6,742	Seba Beach	113	141
81. Eagle	6,205	7,114	Silver Beach	14	17
82. Lamont	6,754	7,700	Spruce Grove	465	309
			Thorsby	491	411
			Warburg	285	257

POPULATION OF CENSUS DIVISIONS OF ALBERTA CLASSIFIED BY MUNICIPALITIES
FOR CENSUS YEARS, 1956 and 1961 (Continued)

Division and Subdivision	Total		Division and Subdivision	Total	
	1961	1956		1961	1956
Division No. 12	47,310	44,947	Div. No. 14—Continued:		
85. I.D.—D.A.	338	348	Towns:		
86. St. Paul	7,421	7,979	Edson	3,198	2,560
87. Bonnyville	10,209	10,058	Hinton	3,529	.....
101. I.D.—D.A.	1,951	2,039	Villages		
102. I.D.—D.A.	4,840	5,066	Evansburg	452	358
121. I.D.—D.A.	323	197	Whitecourt	1,054	.....
143. I.D.—D.A.	1,650	879	Wildwood	479	547
Smoky Lake County					
No. 13	4,913	5,517			
Wood Buffalo					
National Park	86	143	Division No. 15	76,884	70,417
Indian Reserves	3,229	3,530	110. I.D.—D.A.	552	346
Towns:			111. I.D.—D.A.	353	241
Bonnyville	1,736	1,495	123. I.D.—D.A.	279	2
Cold Lake	1,307	1,097	124. I.D.—D.A.	3,108	3,216
Grand Centre	1,493	.....	125. I.D.—D.A.	3,212	3,155
Lac La Biche	1,314	967	126. I.D.—D.A.	2,579	2,427
McMurray	1,186	1,110	128. I.D.—D.A.	769	947
St. Paul	2,823	2,229	129. I.D.—D.A.	577	877
Villages:			130. Smoky River	4,094	3,955
Bonnyville Beach .....	.....	.....	131. I.D.—D.A.	2,403	2,413
Elk Point	692	594	132. I.D.—D.A.	2,646	3,133
Glendon	315	314	133. Spirit River	1,318	1,413
Smoky Lake	626	563	134. I.D.—D.A.	2,505	2,633
Vilna	400	374	135. Peace	2,053	1,732
Warspite	153	159	136. Fairview	1,917	1,885
Waskatenau	305	289	137. I.D.—D.A.	174	127
Division No. 13	45,431	45,033	138. I.D.—D.A.	3,194	3,489
92. Westlock	7,864	8,731	139. I.D.—D.A.	2,772	2,635
93. Lac Ste. Anne	7,151	6,892	144. I.D.—D.A.	212	26
107. I.D.—D.A.	1,571	1,502	145. I.D.—D.A.	144	136
108. I.D.—D.A.	636	781	146. I.D.—D.A.	662	634
122. I.D.—D.A.	613	557	147. I.D.—D.A.	3,189	2,500
Thorhild County No. 7.	5,096	5,596	148. I.D.—D.A.	86	.....
Barrhead County No. 11	5,759	5,944	149. I.D.—D.A.	339	122
Athabasca County			Grande Prairie		
No. 12	6,792	7,367	County No. 1	8,803	8,899
Indian Reserves	432	332	Indian Reserves	3,022	3,032
Towns:			Cities:		
Athabasca	1,487	1,293	Grande Prairie	8,352	6,302
Barrhead	2,286	1,610	Towns:		
Mayerthorpe	663	563	Beaverlodge	897	768
Redwater	1,135	1,065	Fairview	1,506	1,260
Westlock	1,838	1,136	Fahler	741	802
Villages:			Grimshaw	1,095	904
Alberta Beach	135	127	High Prairie	1,756	1,743
Boyle	346	304	Manning	896	726
Castle Island .....	.....	.....	McLennan	1,078	1,092
Clyde	259	221	Peace River	2,543	2,034
Fort Assiniboine	216	.....	Spirit River	890	743
Island Lake	12	.....	Swan Hills	643	.....
Onoway	302	190	Valleyview	1,077	973
Radway	183	203	Villages:		
Sandy Beach	4	.....	Berwyn	347	342
Sangudo	325	331	Donnelly	289	265
Sunset Point	14	.....	Girouxville	318	300
Thorhild	312	288	Hines Creek	398	360
Division No. 14	19,282	15,846	Hythe	449	481
78. I.D.—D.A.	3,484	3,444	Kinuso	323	306
79. I.D.—D.A.	667	2,234	Nampa	271	.....
95. I.D.—D.A.	3,638	4,696	Rycroft	500	424
96. I.D.—D.A.	430	314	Sexsmith	531	345
109. I.D.—D.A.	2,351	1,693	Slave Lake	468	.....
			Wanham	251	.....
			Wembley	303	272

ESTIMATED POPULATION BY SEX AND AGE GROUP, FOR ALBERTA, 1964
(In thousands)

	Total	Male	Female
0 - 4	188.5	96.2	92.3
5 - 9	171.8	88.4	83.4
10 - 14	149.2	76.5	72.7
15 - 19	117.5	60.0	57.5
20 - 24	93.9	47.0	46.9
25 - 29	92.5	46.6	45.9
30 - 34	98.2	51.3	46.9
35 - 39	96.1	49.6	46.5
40 - 44	87.8	44.2	43.6
45 - 49	76.3	39.0	37.3
50 - 54	64.7	33.5	31.2
55 - 59	53.2	28.4	24.8
60 - 64	43.2	23.5	19.7
65 - 69	33.5	17.8	15.7
70 - 74	27.0	14.3	12.7
75 - 79	21.0	11.4	9.6
80 - 84	11.6	6.1	5.5
85 - 89	4.4	2.3	2.1
90 +	1.6	0.8	0.8
TOTAL	1,432.0	736.9	695.1

TABLE 1—GENERAL SUMMARY OF VITAL STATISTICS FOR CENSUS DIVISIONS, ALBERTA, 1964

CENSUS DIVISIONS	LIVE BIRTHS						STILLBIRTHS						Marriages	Deaths in Hospital	INFANT DEATHS						Maternal deaths	Natural Increase	
	Total	Male	Female	In hospital		Illegitimate		20-27 weeks		28 + weeks		Total deaths			Deaths in Hospital		Neo-natal		Post-neo- natal				
				M	F	M	F	M	F	M	F	M			F	M	F	M	F	M			F

TOTAL	36169	18510	17659	18316	17486	1566	1425	42	35	182	191	10634	9482	6697	518	347	336	227	34	19	148	101	8	...
Division No. 1	828	397	431	393	417	20	18	...	2	5	6	306	317	251	11	4	7	4	...	...	4	...	...	511
Division No. 2	1962	1023	939	1007	924	58	61	4	2	11	10	605	547	427	25	23	20	16	...	1	5	6	1	1415
Division No. 3	740	384	356	370	339	53	67	1	...	4	6	316	243	181	14	5	7	5	3	...	4	...	...	497
Division No. 4	322	162	160	156	155	9	4	...	...	2	...	80	122	84	5	5	1	4	...	1	1	...	...	238
Division No. 5	779	421	358	415	354	29	25	...	...	6	3	205	297	219	13	10	11	8	1	1	1	...	...	482
Division No. 6	8757	4474	4283	4455	4245	406	395	10	7	40	55	2720	2418	1655	122	81	90	56	6	4	26	21	1	6319
Division No. 7	923	430	493	427	486	13	18	...	1	5	3	287	300	222	8	9	4	2	2	...	3	7	1	623
Division No. 8	2111	1079	1032	1075	1030	80	76	...	...	16	13	626	556	383	34	23	22	14	3	2	9	7	...	1555
Division No. 9	406	205	201	195	189	17	23	...	2	2	2	115	153	111	7	5	5	3	...	...	2	2	...	253
Division No. 10	1481	745	736	740	733	20	23	1	...	5	6	511	638	384	18	8	12	5	2	...	1	4	...	843
Division No. 11	11892	6115	5777	6103	5769	547	445	18	18	55	52	3691	2577	1869	151	106	95	70	11	5	45	31	...	9315
Division No. 12	1631	810	821	794	809	96	76	5	...	13	12	287	312	215	36	17	19	11	2	1	15	5	1	1319
Division No. 13	1014	530	484	522	481	43	33	...	1	9	5	261	346	246	21	8	13	4	2	1	6	3	2	666
Division No. 14	586	299	287	296	283	20	19	...	1	...	5	98	115	73	11	8	7	5	1	...	3	3	...	471
Division No. 15	2757	1436	1321	1368	1272	155	142	3	1	9	13	526	541	377	42	35	23	20	2	2	17	13	2	2216

TABLE 2—GENERAL SUMMARY OF VITAL STATISTICS FOR INCORPORATED URBAN PLACES OF 1,000 POPULATION AND OVER, ALBERTA, 1964

CITY, TOWN OR VILLAGE	LIVE BIRTHS				STILLBIRTHS				INFANT DEATHS				Maternal deaths	Natural increase					
	Total	Male	Female	In hospital		Illegitimate		20-27 weeks		28 + weeks		Deaths in hospital			Neo-natal				Post-neo-natal
				M	F	M	F	M	F	M	F				M	F	M	F	
Athabasca	48	25	23	25	23	7	1	1	1	32	24	18	1	1	1	1	1	24	
Barrhead	56	33	23	33	23	2	3	1	1	64	38	30	1	1	1	1	1	18	
Beleveu	19	10	9	10	9	1	1	1	1	7	12	10	1	1	1	1	1	7	
Black Diamond	12	7	5	7	5	2	1	1	1	8	8	7	1	1	1	1	1	4	
Blainmore	41	24	17	23	17	1	1	1	1	10	24	20	2	2	1	1	1	17	
Bonnyville	95	45	50	45	49	3	2	2	1	24	18	17	6	1	1	1	1	15	
Bow Island	26	17	9	17	9	1	1	1	1	12	11	6	1	1	1	1	1	15	
Bowness	223	115	108	113	107	14	11	1	1	1	39	40	22	5	4	2	2	183	
Brooks	85	47	38	47	38	5	2	1	1	2	30	33	29	2	2	2	2	52	
Calgary	7651	3938	3713	3930	3706	372	361	7	7	34	50	2470	2088	1439	103	75	51	15563	
Camrose	202	104	98	104	98	5	5	1	1	1	159	23	18	3	1	2	1	27	
Cardston	58	34	24	34	24	6	7	1	1	1	16	17	16	3	1	2	1	35	
Castor	18	7	11	7	11	1	1	1	1	1	29	30	24	3	1	2	1	8	
Clareholm	38	18	20	18	20	2	2	1	1	1	30	14	9	4	2	1	1	47	
Coaldale	61	37	24	37	24	5	4	1	1	1	15	6	4	2	2	2	2	63	
Cold Lake	69	36	33	36	33	4	4	1	1	1	28	23	2	2	2	2	2	14	
Coleman	42	21	21	21	20	1	1	1	1	1	14	4	2	2	2	2	2	20	
Devon	24	10	14	9	14	1	1	1	1	1	31	11	11	1	1	1	1	22	
Didsbury	33	14	19	14	19	2	3	1	1	1	29	14	10	4	3	2	2	44	
Drayton Valley	136	67	69	67	69	2	3	1	1	1	67	61	52	2	4	2	2	122	
Drumheller	105	53	52	53	52	5	2	1	1	41	42	3136	1884	1412	110	68	65	6513	
Edmonton	8397	4320	4077	4313	4075	429	388	15	16	41	42	3136	1884	1412	110	68	65	72	
Edson	97	45	52	45	52	4	5	1	1	48	25	21	1	1	1	1	1	36	
Fairview	64	36	28	36	28	2	2	1	1	28	28	22	2	2	1	2	2	28	
Fort Macleod	68	38	30	38	30	2	4	1	1	24	40	28	3	1	1	1	1	22	
Fort Saskatchewan	91	40	51	40	50	3	1	1	1	1	17	14	10	1	1	1	1	44	
Grand Centre	81	41	40	41	40	4	2	1	1	11	4	2	1	1	1	1	1	77	
Grande Prairie	384	187	197	187	197	8	11	1	1	127	66	49	4	2	3	2	2	318	
Grimshaw	56	26	30	26	30	1	2	1	1	8	9	9	1	1	1	1	1	47	
Hanna	62	33	29	33	29	3	2	1	1	35	36	24	2	2	2	2	2	26	
High Prairie	80	47	33	47	33	5	10	1	1	1	23	26	21	3	1	2	1	54	
High River	34	15	19	15	19	1	1	1	1	1	38	41	27	1	1	1	1	7	
Hinton	140	70	70	70	70	4	3	1	1	1	23	13	9	2	2	2	2	127	
Imperial	71	36	35	36	35	2	2	1	1	1	38	14	20	3	3	2	2	46	
Jasper Place	1147	600	547	600	546	50	48	1	1	49	142	98	11	11	9	1	3	1005	

TABLE 2—GENERAL SUMMARY OF VITAL STATISTICS FOR INCORPORATED URBAN PLACES OF 1,000 POPULATION AND OVER, ALBERTA, 1964 (Continued)

CITY, TOWN OR VILLAGE	LIVE BIRTHS			STILLBIRTHS			INFANT DEATHS			Total deaths	Deaths in hospital	Maternal deaths						Natural Increase								
	Total	Male	Female	In hospital		Illegitimate		20-27 weeks	28 + weeks			Marriages	Total deaths	Deaths in hospital	Total	Neo-natal			Post-neo-natal							
				M	F	M	F									M	F		M	F	M	F	M	F	M	F
Lac La Biche	70	30	40	30	40	7	8	2	4	19	16	12	4	4	4	4	4	4	1	54						
Lacombe	80	38	42	38	42	1	1	1	1	47	38	27	1	1	1	1	1	1	42	42						
Leduc	66	38	28	38	28	1	1	1	2	33	16	8	11	8	5	3	3	3	1	50						
Lethbridge	768	387	381	386	381	31	31	1	1	367	287	241	11	8	9	2	2	2	1	481						
Lloydminster	110	58	52	58	52	1	2	1	2	72	25	21	1	1	1	1	1	1	85	85						
Magrath	19	10	9	10	9	1	1	1	1	7	16	14	1	1	1	1	1	1	3	3						
McLennan	22	13	9	13	9	4	2	1	1	10	6	5	3	4	3	2	2	2	16	16						
McMurray	34	20	14	20	14	8	2	1	2	3	12	7	3	3	2	3	3	3	22	22						
Medicine Hat	541	256	285	256	285	16	11	1	1	265	235	214	7	2	5	2	2	2	286	286						
Nanton	24	10	14	10	14	2	1	1	1	15	15	9	1	1	1	1	1	1	9	10						
Okotoks	16	6	10	6	10	1	1	1	1	9	6	4	3	3	3	3	3	3	10	10						
Olds	93	57	36	57	36	4	4	1	1	38	30	21	3	3	3	3	3	3	63	63						
Peace River	172	83	89	83	89	5	13	1	1	61	34	20	4	3	2	2	2	2	138	138						
Pincher Creek	76	32	44	32	43	2	4	1	1	30	29	23	2	2	2	2	2	2	47	47						
Ponoka	98	48	50	48	50	3	2	1	1	72	47	34	1	1	1	1	1	1	51	51						
Provost	34	20	14	20	14	1	1	1	1	25	13	11	1	1	1	1	1	1	31	31						
Raymond	37	20	17	20	17	2	1	1	1	15	25	20	1	1	1	1	1	1	12	12						
Redcliff	47	24	23	24	23	1	1	1	4	13	14	8	10	8	6	2	3	3	33	33						
Red Deer	683	359	324	358	324	14	25	2	2	264	137	86	10	8	7	6	3	3	546	546						
Redwater	16	7	9	7	9	1	1	1	2	3	15	6	3	3	3	3	3	3	8	8						
Rimbey	36	16	20	15	19	1	1	1	2	32	15	11	1	1	1	1	1	1	21	21						
Rocky Mountain House	117	59	58	59	58	15	7	1	1	48	32	27	3	3	2	2	3	3	85	85						
St. Albert	288	139	149	139	149	5	4	1	1	27	60	15	2	2	1	2	1	1	228	228						
St. Paul	124	68	56	68	56	3	1	3	3	37	36	31	4	4	4	4	3	3	88	88						
Stettler	123	59	64	59	64	2	7	2	2	63	38	31	1	1	1	1	1	1	84	84						
Stony Plain	34	19	15	19	15	3	2	2	2	33	20	14	1	1	1	1	1	1	14	14						
Sylvan Lake	52	31	21	30	21	2	2	1	2	11	19	16	1	1	1	1	1	1	33	33						
Taber	98	51	47	51	47	1	5	2	2	61	32	24	1	1	1	1	1	1	66	66						
Three Hills	29	15	14	15	14	1	1	1	1	14	20	17	1	1	1	1	1	1	9	9						
Valleyview	86	47	39	46	39	4	2	1	1	16	8	5	1	1	1	1	1	1	78	78						
Vegreville	83	34	49	34	49	3	3	1	1	44	29	22	1	1	1	1	1	1	54	54						
Vermillion	62	32	30	32	30	2	1	1	1	49	36	26	1	1	1	1	1	1	26	26						
Viking	27	15	12	15	12	1	1	1	1	17	15	11	3	1	1	1	1	1	12	12						
Vulcan	33	18	15	18	15	1	2	1	1	20	11	11	1	2	1	1	1	1	22	22						
Wainwright	101	54	47	54	46	2	2	1	1	34	24	19	1	1	1	1	1	1	77	77						
Westlock	60	36	24	35	24	3	1	1	1	35	21	14	2	2	3	3	3	3	39	39						
Wetaskiwin	137	69	68	69	68	7	4	1	3	74	81	61	2	2	1	2	2	2	137	137						
Whitecourt	103	56	47	56	47	2	5	1	1	9	19	12	2	4	2	2	2	2	84	84						

TABLE 3—DEATHS BY PLACE OF OCCURRENCE AND PLACE OF RESIDENCE, 1964

PLACE OF OCCURRENCE	Total (Occurrence)	PLACE OF RESIDENCE													
		Nfld.	P.E.I.	N.S.	N.B.	Quebec	Ontario	Manitoba	Sask.	Alberta	B.C.	Yukon	N.W.T.	U.S.A.	Other
Total Residence	146695	3063	981	6384	4736	37552	52204	7721	7373	9482	16051	87	216	727	118
Newfoundland	3066	3029	.....	2	.....	2	5	.....	.....	.....	.....	.....	.....	22	6
Prince Edward Island	978	.....	960	6	3	2	1	.....	.....	.....	.....	.....	.....	5	1
Nova Scotia	6398	9	11	6307	25	6	9	.....	.....	2	1	.....	.....	23	5
New Brunswick	4767	1	3	15	4617	49	11	.....	.....	.....	1	.....	.....	67	3
Quebec	37333	13	4	7	35	37007	129	4	1	5	2	.....	2	102	22
Ontario	52507	9	2	28	13	359	51591	40	11	8	19	.....	4	371	52
Manitoba	7823	.....	.....	.....	.....	.....	85	7594	74	8	19	.....	11	31	1
Saskatchewan	7321	.....	.....	1	.....	1	17	25	7172	56	24	.....	1	23	1
Alberta	9518	.....	1	2	1	2	15	13	67	9302	65	7	13	21	9
British Columbia	16044	.....	.....	3	2	2	27	17	29	54	15830	4	.....	59	17
Yukon	82	.....	.....	.....	.....	.....	1	.....	.....	2	3	73	.....	3	.....
Northwest Territories	194	.....	.....	.....	.....	1	.....	1	.....	4	.....	2	185	.....	1
United States	664	2	.....	13	40	121	313	27	19	41	87	1	.....	.....	.....

TABLE 4—DEATHS AND HOSPITAL DEATHS BY OCCURRENCE AND RESIDENCE
FOR CENSUS DIVISIONS, ALBERTA, 1964

CENSUS DIVISIONS	TOTAL DEATHS				DEATHS IN HOSPITAL			
	Total by Occurrence	Total by Residence	By Occurrence; Residence Elsewhere	By Residence; Occurrence Elsewhere	Total by Occurrence	Total by Residence	By Occurrence; Residence Elsewhere	By Residence; Occurrence Elsewhere
ALBERTA	9518	9482	216	180	6751	6697	157	103
Division No. 1	321	317	24	20	247	251	13	17
Division No. 2	546	547	62	63	429	427	55	53
Division No. 3	220	243	31	54	155	181	22	48
Division No. 4	102	122	14	34	67	84	13	30
Division No. 5	218	297	17	96	144	219	9	84
Division No. 6	2478	2418	234	174	1748	1655	194	101
Division No. 7	274	300	33	59	195	222	26	53
Division No. 8	570	556	109	95	392	383	92	83
Division No. 9	157	153	37	33	100	111	16	27
Division No. 10	572	638	57	123	314	384	40	110
Division No. 11	2972	2577	543	148	2288	1869	491	72
Division No. 12	264	312	23	71	166	215	13	62
Division No. 13	275	346	49	120	168	246	27	105
Division No. 14	70	115	7	52	25	73	2	50
Division No. 15	479	541	23	85	313	377	6	70

TABLE 5—DEATHS AND HOSPITAL DEATHS BY OCCURRENCE AND RESIDENCE
IN URBAN PLACES OF 1,000 POPULATION AND OVER, ALBERTA, 1964

CITY, TOWN OR VILLAGE	TOTAL DEATHS				DEATHS IN HOSPITAL			
	Total by Occurrence	Total by Residence	By Occurrence; Residence Elsewhere	By Residence; Occurrence Elsewhere	Total by Occurrence	Total by Residence	By Occurrence; Residence Elsewhere	By Residence; Occurrence Elsewhere
Athabasca	29	24	15	10	25	18	15	8
Barrhead	63	38	30	5	54	30	28	4
Bellevue	1	12	....	11	....	10	....	10
Black Diamond	1	8	....	7	....	7	....	7
Blairmore	7	24	1	18	3	20	....	17
Bonnyville	29	18	13	2	28	17	13	2
Bow Island	13	11	4	2	7	6	3	2
Bowness	18	40	2	24	2	22	1	21
Brooks	49	33	24	8	44	29	23	8
Calgary	2227	2088	306	167	1614	1439	270	95
Camrose	226	175	59	8	93	39	57	3
Cardston	27	23	9	5	23	18	9	4
Castor	23	17	10	4	22	16	10	4
Claresholm	46	30	22	6	39	24	21	6
Coaldale	18	14	5	1	13	9	5	1
Cold Lake	13	6	9	2	12	4	9	1
Coleman	4	28	....	24	1	23	....	22
Devon	2	4	....	2	....	2	....	2
Didsbury	20	11	13	4	19	11	12	4
Drayton Valley	31	14	21	4	27	10	19	2
Drumheller	105	61	52	8	97	52	52	7
Edmonton	2427	1884	727	184	2006	1412	685	91
Edson	22	25	7	10	19	21	7	9
Fairview	46	28	23	5	41	22	22	3
Fort Macleod	46	40	12	6	32	28	10	6
Fort Saskatchewan	6	14	2	10	....	10	....	10
Grand Centre	1	4	....	3	....	2	....	2
Grande Prairie	103	66	48	11	91	49	46	4
Grimshaw .....	....	9	....	9	....	9	....	9
Hanna	52	36	22	6	42	24	22	4
High Prairie	53	26	34	7	48	21	32	5
High River	76	41	43	8	53	27	34	8
Hinton	10	13	2	5	6	9	2	5
Innisfail	36	25	19	8	32	20	17	5
Jasper Place	39	142	6	109	1	98	....	97
Lac La Biche	24	16	15	7	21	12	13	4
Lacombe	55	38	26	9	42	27	22	7
Leduc	23	16	13	3	18	8	12	2
Lethbridge	324	287	68	31	278	241	62	25
Lloydminster	10	25	5	20	8	21	5	18
Magrath	16	16	6	6	15	14	6	5
McLennan	19	6	17	4	18	5	16	3
McMurray	17	12	5	....	12	7	5	....
Medicine Hat	279	255	40	16	240	214	36	10
Nanton	4	15	1	12	1	9	....	8
Okotoks	1	6	....	5	....	4	....	4
Olds	43	30	18	5	35	21	17	3
Peace River	42	34	18	10	27	20	12	5
Pincher Creek	38	29	14	5	31	23	12	4
Ponoka	119	47	80	8	109	34	79	4
Provost	25	13	14	2	22	11	12	1
Raymond	31	25	12	6	27	20	12	5
Redcliff	6	14	....	8	....	8	....	8
Red Deer	177	137	64	24	124	86	55	17
Redwater	3	8	2	7	....	6	....	6
Rimbey	21	15	11	5	18	11	11	4
Rocky Mountain House	33	32	11	10	28	27	10	9
St. Albert	45	60	5	20	....	15	....	15
St. Paul	45	36	17	8	40	31	17	8
Stettler	51	39	22	10	46	31	20	5
Stony Plain	28	20	15	7	23	14	15	6
Sylvan Lake	5	19	3	17	....	16	....	16
Taber	46	32	20	6	40	24	20	4
Three Hills	20	20	4	4	17	17	4	4
Valleyview	2	8	1	7	....	5	....	5
Vegreville	43	29	19	5	37	22	18	3
Vermilion	33	36	7	10	24	26	6	8
Viking	24	15	16	7	22	11	15	4
Vulcan	12	11	7	6	11	11	6	6
Wainwright	39	24	19	4	34	19	18	3
Westlock	60	21	47	8	56	14	46	4
Wetaskiwin	101	81	40	20	83	61	38	16
Whitecourt	8	19	1	12	....	12	....	12

TABLE 6—CAUSE OF DEATH BY SEX FOR CENSUS DIVISIONS
(INCLUDING CITIES, TOWNS, AND VILLAGES) IN ALBERTA, 1964

CAUSE OF DEATH (Intermediate List) (7th Rev.)	SEX	Total	Division No. 1	Division No. 2	Division No. 3	Division No. 4	Division No. 5	Division No. 6	Division No. 7	Division No. 8	Division No. 9	Division No. 10	Division No. 11	Division No. 12	Division No. 13	Division No. 14	Division No. 15
ALL CAUSES	Total	9482	317	547	243	122	297	2418	300	556	153	638	2577	312	346	115	541
	Male	6044	200	350	154	81	197	1507	190	359	102	411	1615	209	234	81	354
	Female	3438	117	197	89	41	100	911	110	197	51	227	962	103	112	34	187
I. INFECTIVE AND PARASITIC DISEASES	Total	72	...	3	...	...	1	18	...	3	1	7	20	5	1	2	11
	Male	47	...	3	...	...	1	16	...	2	...	5	12	1	...	2	5
	Female	25	...	...	...	...	...	2	...	1	1	2	8	4	1	...	6
A 1 Tuberculosis of respiratory system	Male	22	...	2	...	...	...	9	...	1	...	2	4	1	...	1	2
A Active	Female	4	...	...	...	...	...	1	...	...	...	...	2	1	...	...	...
B Inactive	Male	20	...	1	...	...	...	9	...	1	...	2	3	1	...	1	2
	Female	3	...	...	...	...	...	...	...	...	...	...	2	1	...	...	...
A 2 Tuberculosis of meninges and central nervous system	Male	2	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...
	Female	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
A 5 Tuberculosis, all other forms	Male	1	...	...	...	...	...	...	...	...	...	...	2	...	...	...	1
	Female	2	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...
A 9 General paralysis of insane	Male	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
	Female	2	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...
A 10 All other syphilis	Male	3	...	...	...	...	...	1	...	...	...	1	...	...	...	1	...
	Female	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
A 20 Septicaemia and pyaemia	Male	2	...	1	...	...	...	1	...	...	...	...	...	...	1	...	...
	Female	2	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
A 22 Whooping cough	Male	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Female	2	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1
A 23 Meningococcal infections	Male	2	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...
	Female	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
A 29 Acute infectious encephalitis	Male	2	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...
	Female	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
A 30 Late effects of acute poliomyelitis and acute infectious encephalitis	Male	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
	Female	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
A 32 Measles	Male	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
	Female	8	...	...	...	...	...	...	...	1	...	...	...	3	...	...	4
A 34 Infectious hepatitis	Male	4	...	...	...	...	...	...	...	...	...	1	1	...	...	...	2
	Female	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
A 43 All other diseases classified as infective and parasitic	Male	6	...	...	...	...	...	3	...	1	...	1	1	...	...	...	...
	Female	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
II NEOPLASMS	Total	1634	54	101	34	21	45	421	53	83	25	103	488	49	60	20	77
	Male	954	29	70	14	11	28	249	32	44	19	56	276	35	35	13	43
	Female	680	25	31	20	10	17	172	21	39	6	47	212	14	25	7	34
A 44 Malignant neoplasm of buccal cavity and Pharynx	Male	18	...	...	...	1	...	8	...	...	...	...	3	1	1	...	4
	Female	7	...	...	1	...	...	4	...	...	...	...	...	...	1	...	1
A 45 Malignant neoplasm of oesophagus	Male	19	...	1	1	...	...	6	...	...	1	1	6	...	2	...	1
	Female	7	...	...	...	...	...	2	...	...	1	...	4	...	...	...	...
A 46 Malignant neoplasm of stomach	Male	138	7	11	1	1	8	29	6	5	2	13	31	8	5	3	8
	Female	52	1	3	2	...	...	14	...	4	...	11	10	...	3	...	4
A 47 Malignant neoplasm of intestine, except rectum	Male	67	2	6	1	1	1	19	4	1	2	1	20	1	4	...	4
	Female	84	3	4	2	3	3	19	1	4	...	7	23	2	1	4	8
A 48 Malignant neoplasm of rectum	Male	40	...	2	3	...	1	12	1	1	2	3	13	1	...	...	1
	Female	23	1	...	1	...	1	7	2	...	...	1	9	...	...	...	1
A 49 Malignant neoplasm of larynx	Male	8	...	...	...	...	...	2	...	1	1	1	3	...	...	...	...
	Female	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
A 50 Malignant neoplasm of trachea, and of bronchus and lung not specified as secondary	Male	178	5	17	1	...	4	48	3	4	3	10	61	8	8	3	3
	Female	27	...	2	...	...	...	5	3	2	...	...	11	...	2	...	2
A 51 Malignant neoplasm of breast	Male	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
	Female	126	2	2	3	3	4	39	5	8	...	6	42	5	3	...	4
A 52 Malignant neoplasm of cervix uteri	Female	32	1	...	2	...	1	8	...	3	...	2	11	1	...	1	2
A 53 Malignant neoplasm of other and unspecified parts of uterus	Female	15	2	...	1	1	1	2	...	...	2	...	5	...	...	1	...
A 54 Malignant neoplasm of prostate	Male	109	4	4	1	4	5	27	3	11	1	10	28	4	2	1	4
A 55 Malignant neoplasm of skin	Male	14	...	...	1	1	...	3	...	...	...	3	4	...	...	...	2
	Female	16	1	1	1	1	1	5	1	1	...	1	2	...	...	...	1
A 56 Malignant neoplasm of bone and connective tissue	Male	11	...	1	...	...	...	2	...	2	...	1	4	...	...	...	...
	Female	8	1	...	1	...	...	4	...	...	...	...	2	...	...	...	...
A 57 Malignant neoplasm of all other and unspecified sites	Male	237	9	22	3	2	8	59	9	10	2	10	73	7	8	5	10
	Female	194	10	14	6	1	3	45	7	13	3	12	57	5	11	1	6
A Other digestive organs (155-159)	Male	107	2	10	1	...	2	26	6	1	8	33	3	3	2	4	3
	Female	65	3	3	3	1	1	9	6	2	2	7	18	3	4	...	...
B Other respiratory organs (160, 164, 165)	Male	3	...	1	...	...	...	1	...	...	...	1	...	...	...	...	...
	Female	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
C Urinary organs (180, 181)	Male	51	3	7	...	1	4	13	1	2	1	...	13	...	1	2	3
	Female	22	1	3	...	...	...	8	...	2	...	...	7	...	1	...	...

TABLE 6—CAUSE OF DEATH BY SEX FOR CENSUS DIVISIONS
(INCLUDING CITIES, TOWNS, AND VILLAGES) IN ALBERTA, 1964—Continued

CAUSE OF DEATH (Intermediate List)		SEX	Total	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
(7th Rev.)				Division No.	Division No.	Division No.	Division No.	Division No.	Division No.	Division No.	Division No.	Division No.	Division No.	Division No.	Division No.	Division No.	Division No.	Division No.
D Brain and other parts nervous system (193)	Male	Female	31	23	1	3	1	1	8	1	1	17	1	1	1	1	1	1
E Other	Male	Female	45	4	5	3	2	1	11	1	2	10	3	3	1	2	1	3
A 58 Leukaemia and aleukaemia	Male	Female	83	6	3	3	1	1	24	1	7	1	3	24	2	4	1	2
A 59 Lymphosarcoma and other neoplasms of lymphatic and haematopoietic system	Male	Female	52	1	2	1	1	1	15	4	6	2	2	10	3	1	1	1
A Hodgkin's disease (201)	Male	Female	42	2	2	1	1	1	9	3	3	3	18	1	2	1	1	1
B Other	Male	Female	53	4	1	1	1	15	2	2	3	1	16	2	4	1	2	2
A 60 Benign neoplasms and neoplasms of unspecified nature	Male	Female	36	1	2	1	2	8	1	1	4	15	1	1	1	1	1	1
III, IV. ALLERGIC DISORDERS AND ENDOCRINE METABOLIC AND BLOOD DISEASES	Male	Female	15	5	1	1	1	9	1	1	1	4	4	4	1	1	1	1
A 61 Nontoxic goitre	Male	Female	38	4	1	1	1	6	1	1	3	1	12	2	4	1	2	2
A 63 Diabetes mellitus	Male	Female	31	1	2	1	2	7	1	1	4	11	1	1	1	1	1	1
A 64 Avitaminosis and other deficiency states	Male	Female	9	1	1	1	1	3	1	1	1	4	11	1	1	1	1	1
A 65 Anaemias	Male	Female	11	1	1	1	1	7	1	1	1	4	3	1	1	1	1	3
A 66 Allergic disorders; all other endocrine, metabolic and blood diseases	Male	Female	255	9	19	9	4	9	59	12	9	4	25	65	11	3	3	14
V. MENTAL, PSYCHONEUROTIC AND PERSONALITY DISORDERS	Male	Female	148	2	12	8	2	4	36	6	4	2	17	42	4	2	2	7
A 67 Psychoses	Male	Female	107	7	7	1	2	5	23	6	5	2	8	23	7	3	1	7
A 68 Psychoneuroses and disorders of personality	Male	Female	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
A 69 Mental deficiency	Male	Female	82	1	6	6	1	2	17	3	3	1	8	25	3	1	2	4
VI. DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS	Male	Female	74	5	5	2	3	15	4	5	1	7	13	6	1	1	1	6
A 70 Vascular lesions affecting central nervous system	Male	Female	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
A 71 Nonmeningococcal meningitis	Male	Female	17	2	1	1	1	4	2	1	3	4	1	2	1	1	1	1
A 72 Multiple sclerosis	Male	Female	11	2	1	1	1	2	1	1	1	1	2	1	1	1	1	1
A 73 Epilepsy	Male	Female	45	1	5	2	1	14	1	1	1	6	12	1	1	1	2	2
A 78 All other diseases of the nervous system and sense organs	Male	Female	20	2	2	2	2	4	1	1	1	8	1	1	1	1	1	1
VII. DISEASES OF THE CIRCULATORY SYSTEM	Total	Male	20	9	1	1	1	3	1	2	3	6	2	1	1	1	2	2
A 79 Rheumatic fever	Male	Female	11	1	1	1	1	2	1	2	2	2	2	1	1	1	1	1
A 80 Chronic rheumatic heart disease	Male	Female	5	6	1	1	1	1	1	1	1	3	2	1	1	1	1	1
A 81 Arteriosclerotic and degenerative heart disease	Male	Female	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1
A 82 Other diseases of heart	Male	Female	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
A 83 Hypertension with heart disease	Male	Female	17	2	1	1	1	4	2	1	1	3	4	1	1	1	1	1
A 84 Hypertension without mention of heart	Male	Female	11	2	1	1	1	2	1	1	1	1	2	1	1	1	1	1
A 85 Diseases of arteries	Male	Female	3	3	3	1	1	8	2	1	2	16	1	1	1	1	1	1
A 86 Other diseases of circulatory system	Male	Female	23	1	1	1	1	10	1	1	2	7	1	1	1	1	1	2
A 70 Vascular lesions affecting central nervous system	Male	Female	996	44	72	27	15	25	280	20	50	16	63	255	31	42	13	43
A 71 Nonmeningococcal meningitis	Male	Female	550	27	41	13	10	13	143	9	32	10	30	138	20	25	9	30
A 72 Multiple sclerosis	Male	Female	446	17	31	14	5	12	137	11	18	6	33	117	11	17	4	13
A 73 Epilepsy	Male	Female	489	23	36	12	8	13	127	5	31	9	28	118	17	25	9	28
A 78 All other diseases of the nervous system and sense organs	Male	Female	410	17	29	13	5	12	121	10	18	4	32	108	11	16	3	11
A 79 Rheumatic fever	Male	Female	5	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
A 80 Chronic rheumatic heart disease	Male	Female	7	1	1	1	1	4	1	1	1	1	1	1	1	1	1	1
A 81 Arteriosclerotic and degenerative heart disease	Male	Female	6	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1
A 82 Other diseases of heart	Male	Female	10	1	1	1	1	4	2	1	1	3	1	2	1	1	1	1
A 83 Hypertension with heart disease	Male	Female	5	1	1	1	1	4	1	1	1	1	1	1	1	1	1	1
A 84 Hypertension without mention of heart	Male	Female	39	3	3	1	1	8	2	1	2	16	1	1	1	1	1	1
A 85 Diseases of arteries	Male	Female	23	1	1	1	1	10	1	1	2	7	1	1	1	1	1	2
A 79 Rheumatic fever	Male	Female	3308	145	198	82	45	113	754	134	202	52	211	955	77	141	37	162
A 80 Chronic rheumatic heart disease	Male	Female	2220	98	128	59	35	82	480	88	143	34	144	631	53	102	28	115
A 81 Arteriosclerotic and degenerative heart disease	Male	Female	1088	47	70	23	10	31	274	46	59	18	67	324	24	39	9	47
A 82 Other diseases of heart	Male	Female	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
A 83 Hypertension with heart disease	Male	Female	54	1	5	1	1	13	3	4	3	14	1	2	1	1	6	6
A 84 Hypertension without mention of heart	Male	Female	47	1	5	1	1	11	3	3	1	13	2	4	1	1	1	1
A 85 Diseases of arteries	Male	Female	1850	82	106	51	32	68	385	74	127	30	117	528	46	84	25	95
A 86 Other diseases of circulatory system	Male	Female	785	40	53	15	10	20	192	37	42	10	49	236	18	24	5	34
A 79 Rheumatic fever	Male	Female	100	3	3	2	2	3	31	4	5	1	5	28	3	6	1	6
A 80 Chronic rheumatic heart disease	Male	Female	71	2	3	4	2	19	5	5	4	3	17	3	3	1	4	4
A 81 Arteriosclerotic and degenerative heart disease	Male	Female	40	6	3	1	1	8	1	1	1	6	11	2	1	2	2	2
A 82 Other diseases of heart	Male	Female	48	3	3	1	1	13	1	3	3	6	10	1	5	1	2	2
A 83 Hypertension with heart disease	Male	Female	29	1	3	1	2	10	1	1	1	2	9	1	2	1	2	2
A 84 Hypertension without mention of heart	Male	Female	27	3	3	1	3	7	1	1	1	8	1	1	1	1	2	2
A 85 Diseases of arteries	Male	Female	122	7	5	5	6	26	5	6	2	10	36	3	6	1	5	5
A 86 Other diseases of circulatory system	Male	Female	88	1	5	3	4	26	4	4	2	6	34	1	1	1	3	3
A 79 Rheumatic fever	Male	Female	24	1	3	1	2	7	2	1	1	5	1	5	1	1	1	1
A 80 Chronic rheumatic heart disease	Male	Female	20	1	1	1	1	6	1	1	1	6	2	1	1	1	1	1

TABLE 6—CAUSE OF DEATH BY SEX FOR CENSUS DIVISIONS
(INCLUDING CITIES, TOWNS, AND VILLAGES) IN ALBERTA, 1964—Continued

CAUSE OF DEATH (Intermediate List) (7th Rev.)	SEX	Total	Division No. 1	Division No. 2	Division No. 3	Division No. 4	Division No. 5	Division No. 6	Division No. 7	Division No. 8	Division No. 9	Division No. 10	Division No. 11	Division No. 12	Division No. 13	Division No. 14	Division No. 15
VIII. DISEASES OF THE RESPIRATORY SYSTEM	Total	593	13	29	18	4	18	123	10	45	8	73	167	25	11	7	42
	Male	383	9	18	9	4	12	84	7	23	6	45	111	17	6	6	26
	Female	210	4	11	9	...	6	39	3	22	2	28	56	8	5	1	16
A 88 Influenza	Male	7	...	...	...	...	1	2	1	1	...	1	1	...	...	...	...
	Female	5	...	1	...	...	1	1	1	...	...	1	...	...	...	...	...
A 89 Lobar pneumonia	Male	20	1	2	1	...	3	3	...	1	...	2	2	2	...	1	2
	Female	7	...	2	1	...	1	1	...	...	...	1	...	...	...	...	2
A 90 Bronchopneumonia	Male	142	3	4	4	2	2	34	1	7	2	34	29	5	4	5	6
	Female	119	2	2	3	...	4	21	1	13	1	24	35	3	...	1	9
A 91 Primary atypical, other and unspecified pneumonia	Male	69	...	...	...	1	...	11	2	5	...	1	32	6	1	...	10
	Female	46	...	4	4	...	1	9	1	5	1	2	11	3	3	...	2
A 92 Acute bronchitis	Male	3	...	1	1	...	...	...	...	1	...	...	...	...	...	...	...
	Female	2	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...
A 93 Bronchitis, chronic and unqualified	Male	64	5	5	3	1	3	17	...	3	2	...	23	...	...	...	2
	Female	5	...	2	...	...	...	1	...	...	...	...	1	...	1	...	...
A 95 Empyema and abscess of lung	Male	8	...	...	...	...	...	1	1	2	...	1	1	1	...	...	1
	Female	2	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...
A 96 Pleurisy	Male	2	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...
	Female	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
A 97 All other respiratory diseases	Male	68	...	5	...	...	3	16	2	3	2	6	22	3	1	...	5
	Female	24	2	...	...	...	...	5	...	3	...	1	7	2	1	...	3
IX. DISEASES OF THE DIGESTIVE SYSTEM	Total	385	13	22	13	7	17	107	13	19	8	26	82	19	14	4	21
	Male	234	6	13	8	4	8	65	9	15	5	20	43	15	9	2	12
	Female	151	7	9	5	3	9	42	4	4	3	6	39	4	5	2	9
A 99 Ulcer of stomach	Male	23	...	...	1	...	1	8	2	...	1	2	4	1	1	...	2
	Female	7	...	1	1	...	...	4	...	...	...	...	1	...	...	...	...
A100 Ulcer of duodenum	Male	23	1	...	...	2	1	7	3	1	...	3	4	1	...	...	...
	Female	10	1	1	...	...	1	3	...	1	1	1	1	...	...	...	...
A101 Gastritis and duodenitis	Male	4	...	...	...	...	...	...	...	...	...	...	2	...	...	...	1
	Female	2	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
A102 Appendicitis	Male	13	...	1	2	...	1	2	1	1	...	...	1	1	1	...	2
	Female	7	...	1	...	1	...	1	...	1	...	...	1	...	1	...	1
A103 Intestinal obstruction and hernia	Male	39	...	4	2	...	1	9	2	4	...	4	10	1	...	1	1
	Female	29	1	3	3	1	1	7	2	...	...	...	10	...	...	...	...
A104 Gastro-enteritis and colitis, except diarrhoea of the newborn	Male	28	1	3	...	...	1	4	...	1	...	2	4	6	4	...	2
	Female	16	...	...	...	...	3	5	1	1	...	...	2	...	...	...	2
A105 Cirrhosis of liver	Male	45	1	1	...	1	3	19	...	1	2	2	11	...	2	...	2
	Female	26	2	1	...	1	2	11	...	...	1	...	3	1	2	1	1
A106 Cholelithiasis and cholecystitis	Male	19	1	2	2	1	...	4	1	2	1	1	1	2	...	1	...
	Female	22	1	2	1	...	1	4	1	...	1	1	8	1	...	...	1
A107 Other disease of digestive system	Male	40	2	2	1	...	...	12	...	5	1	5	6	3	1	...	2
	Female	32	2	...	...	...	...	7	...	1	...	4	13	...	2	1	2
X. DISEASES OF THE GENITO-URINARY SYSTEM	Total	142	6	11	5	...	9	34	4	8	4	10	33	6	6	3	3
	Male	100	4	10	5	...	8	21	4	5	2	6	24	3	4	3	1
	Female	42	2	1	...	...	1	13	...	3	2	4	9	3	2	...	2
A108 Acute nephritis	Male	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...
	Female	3	...	...	...	...	...	2	...	...	...	...	...	1	...	...	...
A109 Chronic, other and unspecified nephritis	Male	29	...	2	3	...	2	11	1	...	1	1	6	...	1	...	1
	Female	20	1	...	...	...	...	7	...	2	1	3	3	2	...	...	1
A110 Infections of kidney	Male	26	1	3	1	...	1	5	...	3	...	2	8	...	...	2	...
	Female	15	1	1	...	...	...	3	...	1	1	1	5	...	1	...	1
A111 Calculi of urinary system	Male	4	...	...	...	...	1	...	...	1	...	...	1	...	...	1	...
	Female	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
A112 Hyperplasia of prostate	Male	29	3	3	1	...	4	3	1	1	...	3	6	3	1	...	...
A114 Other diseases of genito-urinary system	Male	12	...	2	...	...	...	2	2	...	1	...	3	...	2	...	...
	Female	4	...	...	...	...	1	1	...	...	...	...	1	...	1	...	...
XI. DELIVERIES AND COMPLI- CATIONS OF PREGNANCY, CHILDBIRTH, AND THE PUERPERIUM	Total	8	...	1	...	...	...	1	1	...	...	...	...	1	2	...	2
A117 Haemorrhage of pregnancy and childbirth	Female	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
A119 Abortion with sepsis	Female	3	...	...	...	...	...	...	1	...	...	...	...	...	2	...	...
A120 Other complications of pregnancy, childbirth and the puerperium	Female	4	...	1	...	...	...	1	...	...	...	...	...	...	...	...	2
XII, XIII. DISEASES OF THE SKIN, AND MUSCULO- SKELETAL SYSTEM	Total	41	...	4	3	1	1	11	2	3	1	1	12	...	...	...	2
	Male	18	...	1	1	1	1	3	...	3	...	1	6	...	...	...	1
	Female	23	...	3	2	...	...	8	2	...	1	...	6	...	...	...	1
A121 Infections of skin and subcutaneous tissue	Male	3	...	1	...	...	...	...	...	1	...	...	1	...	...	...	...
	Female	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...

DEPARTMENT OF VITAL STATISTICS

TABLE 6—CAUSE OF DEATH BY SEX FOR CENSUS DIVISIONS
(INCLUDING CITIES, TOWNS, AND VILLAGES) IN ALBERTA, 1964—Continued

CAUSE OF DEATH (Intermediate List)		SEX	Total	Division														
				No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10	No. 11	No. 12	No. 13	No. 14	No. 15
(7th Rev.)																		
A122	Arthritis and spondylitis	Male	5				1					1				2		
		Female	11		1					4	1					4		1
A123	Muscular rheumatism and rheumatism, unspecified	Male																
		Female	1							1								
A126	All other diseases of skin and musculoskeletal system	Male	10			1		1		3		1			1	3		
		Female	10		2	2				3	1					2		
XIV. CONGENITAL MALFORMATIONS		Total	173	4	5	2	1	3	4	2	17	1	5	5	60	10	6	16
		Male	98	3	2	1	1	1	30	1	5	1	2	30	6	5	5	10
		Female	75	1	3	1		2	11	1	12		3	30	4	1		6
A127	Spina bifida and meningocele	Male	8	1		1	1				2				1			2
		Female	7							1			2		3	1		
	A Without hydrocephalus	Male	4			1	1				1							1
		Female	3										1		1			
	B With hydrocephalus	Male	4	1							1				1			1
		Female	4							1			1	2				
A128	Congenital malformations of circulatory system	Male	46	1	1				14		2		2	15	3	3		5
		Female	32						7		5		1	13	2	1		3
A129	All other congenital malformations	Male	44	1	1			1	16	1	1	1		14	3	2		3
		Female	36	1	3	1		2	4		7			14	1			3
XV. CERTAIN DISEASES OF EARLY INFANCY		Total	542	9	33	13	6	20	143	7	32	7	19	151	26	20	14	42
		Male	325	6	19	9	1	11	85	3	22	4	14	90	16	15	8	22
		Female	217	3	14	4	5	9	58	4	10	3	5	61	10	5	6	20
A130	Birth injuries	Male	44		3		1	2	8	3	2	2	4	11	3	1	2	2
		Female	27	1	3	1		1	5		2			5	2	1	2	4
A131	Postnatal asphyxia and atelectasis	Male	87	1	5	2		2	17		8		5	32	1	5	3	6
		Female	46	2	1	2		1	8		4		2	20		1		5
A132	Infections of the newborn	Male	25			2		1	5		1	1		7	3		1	4
		Female	11					1	3					4	1	1		
A133	Haemolytic diseases of newborn	Male	10	1		1		2			2			3				1
		Female	5						1					3	1			
A134	All other defined diseases of early infancy	Male	10	1		1			2		2				1	2		1
		Female	6		2			1						2				1
A135	Ill-defined diseases peculiar to early infancy, and immaturity unqualified	Male	149	3	11	3		4	53		7	1	5	37	8	7	2	8
		Female	122		8	1	4	5	41	4	4	3	3	27	6	2	4	10
XVI. SYMPTOMS, SENILITY, AND ILL-DEFINED CONDITIONS		Total	311	1	3	5		4	217	5	8	4	25	29	2	2	2	4
		Male	213	1	2	2		3	152	5	7	1	16	17	1	1	2	3
		Female	98		1	3		1	65		1	3	9	12	1	1		1
A136	Senility without mention of psychosis	Male	54					1	35	1	3		2	9		1	1	1
		Female	36			1		1	25					8		1		
A137	Ill-defined and unknown causes	Male	159	1	2	2		2	117	4	4	1	14	8	1		1	2
		Female	62		1	2			40		1	3	9	4	1			1
EXVII. ACCIDENTS, POISONINGS AND VIOLENCE (CLASSIFICATION ACCORDING TO EXTERNAL CAUSE)		Total	1002	19	46	32	18	31	206	37	75	22	67	254	48	37	10	100
		Male	745	15	31	25	12	25	142	26	54	18	54	191	37	32	6	77
		Female	257	4	15	7	6	6	64	11	21	4	13	63	11	5	4	23
AE138	Motor vehicle accidents	Male	271	3	14	7	4	12	51	6	23	8	22	72	10	9		30
		Female	100	3	2	1	3	5	20	7	10		5	31	3	1	1	8
	A Traffic accidents (810-825)	Male	261	3	13	6	3	11	51	6	22	7	21	69	10	9		30
		Female	99	3	2	1	3	5	20	7	10		5	31	3	1	1	7
	B Non-traffic accidents	Male	10		1	1	1	1			1	1	1	3				
		Female	1															
AE139	Other transport accidents	Male	29		1			1	4		4			15		2	1	1
		Female																
	A Submersion of occupant of small boat (850)	Male	6								3			2		1		
		Female																
	C Other	Male	23		1			1	4		1			13		1	1	1
		Female																
AE140	Accidental poisoning	Male	33				1	3	11		1	2		11		3		1
		Female	15				1	1	4		2	2		2				
AE141	Accidental falls	Male	63	5	2	5	1	2	14	4	2		11	13		1		1
		Female	42		5	4		2	13	3	1	1	4	8	2	1		3
AE142	Accidents caused by machinery	Male	27		2	1	2	1	2	1			3	4	2	2	1	6
		Female	2											1	1			
AE143	Accident caused by fire and explosion of combustible material	Male	52		2			1	17	1	3		1	14	5	2		6
		Female	20		1		1		5		1		2	2	2	1		5
AE144	Accident caused by hot substance, corrosive liquid, steam, and radiation	Male																
		Female	1	1														
AE145	Accident caused by firearm	Male	16						5	1	3		2		2	1		2
		Female	1												1			

TABLE 6—CAUSE OF DEATH BY SEX FOR CENSUS DIVISIONS
(INCLUDING CITIES, TOWNS, AND VILLAGES) IN ALBERTA, 1964—Continued

CAUSE OF DEATH (Intermediate List) (7th Rev.)	SEX	Total	Division No. 1	Division No. 2	Division No. 3	Division No. 4	Division No. 5	Division No. 6	Division No. 7	Division No. 8	Division No. 9	Division No. 10	Division No. 11	Division No. 12	Division No. 13	Division No. 14	Division No. 15
E146 Accidental drowning	Male	37	2	4	1	.....	.....	6	1	2	2	5	4	5	.....	.....	5
	Female	12	.....	.....	.....	.....	.....	3	.....	.....	.....	1	4	1	1	.....	2
E147 All other accidental causes	Male	79	1	3	7	2	2	11	6	8	.....	2	12	5	5	3	12
	Female	23	.....	3	1	.....	.....	2	.....	4	1	1	7	1	.....	1	2
E148 Suicide	Male	126	4	3	3	2	2	20	5	8	6	8	41	8	6	1	9
	Female	31	.....	4	.....	1	.....	14	1	3	.....	.....	6	.....	1	.....	1
E149 Homicide and injury purposely inflicted by other persons (not in war)	Male	12	.....	.....	1	.....	1	1	1	.....	.....	.....	5	.....	1	.....	2
	Female	10	.....	.....	1	.....	.....	3	.....	.....	.....	.....	2	.....	.....	.....	4
XVII. ACCIDENTS, POISONINGS AND VIOLENCE (CLASSIFICATION ACCORDING TO NATURE OF INJURY)	Total	1002	19	46	32	18	31	206	37	75	22	67	254	48	37	10	100
	Male	745	15	31	25	12	25	142	26	54	18	54	191	37	32	6	77
	Female	257	4	15	7	6	6	64	11	21	4	13	63	11	5	4	23
N138 Fracture of skull	Male	154	3	7	3	3	7	27	3	15	3	13	37	4	5	2	22
	Female	43	.....	1	.....	2	1	12	2	4	.....	3	12	1	.....	.....	5
N139 Fracture of spine and trunk	Male	37	2	1	3	.....	1	6	1	5	1	2	5	1	1	.....	8
	Female	15	.....	1	1	.....	.....	3	1	1	.....	1	6	1	.....	.....	.....
N140 Fracture of limbs	Male	34	.....	1	4	1	1	7	4	1	.....	8	6	.....	1	.....	.....
	Female	30	.....	3	3	.....	.....	9	2	2	1	3	5	1	1	.....	.....
N141 Dislocation without fracture	Male	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Female	1	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
N143 Head injury (excluding fracture)	Male	98	1	5	2	1	6	21	3	5	2	8	24	5	4	.....	11
	Female	18	1	3	2	.....	1	2	1	1	.....	.....	3	1	.....	.....	3
N144 Internal injury of chest, abdomen, and pelvis	Male	158	4	6	5	3	3	26	5	8	3	8	53	6	10	2	16
	Female	44	2	.....	.....	1	1	10	4	2	.....	1	15	2	1	1	4
N145 Laceration and open wounds	Male	22	1	.....	.....	.....	.....	4	1	3	2	1	3	5	.....	.....	2
	Female	3	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1	.....	.....	.....	1
N146 Superficial injury, contusion and crushing with intact skin surface	Male	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
	Female	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
N147 Effects of foreign body entering through orifice	Male	13	.....	.....	2	.....	.....	2	1	1	.....	.....	3	1	.....	1	2
	Female	13	.....	3	1	.....	.....	1	.....	3	.....	.....	5	.....	.....	.....	.....
N148 Burns	Male	49	.....	2	.....	.....	2	13	1	1	.....	2	15	6	2	.....	5
	Female	21	1	1	.....	1	1	3	.....	2	.....	3	2	2	.....	.....	5
N149 Effects of poisons	Male	67	.....	1	.....	2	3	20	1	4	.....	4	24	1	5	.....	2
	Female	36	.....	1	.....	2	1	15	.....	3	2	.....	6	.....	2	2	2
N150 All other and unspecified effects of external causes	Male	112	4	8	6	2	2	16	6	10	3	12	21	8	4	1	9
	Female	33	.....	2	.....	.....	1	9	.....	2	1	2	8	3	1	1	3

TABLE 7—CAUSE OF DEATH BY SEX, RURAL AND URBAN AND FOR URBAN PLACES OF 5,000 POPULATION AND OVER IN ALBERTA, 1964

CAUSE OF DEATH (Intermediate List) (7th Rev.)	SEX	Total	Bowness	Calgary	Camrose	Edmonton	Grande Prairie	Jasper Place	Lethbridge	Medicine Hat	Red Deer	Wetaskiwin	Tl. urban places 5000 + populati'n	Other urban places 1000-4999 pop.	Residual (rural)
ALL CAUSES	Total	9482	40	2088	175	1884	66	142	287	256	137	81	5155	1423	2904
	Male	6044	27	1285	109	1170	47	86	181	155	86	51	3197	901	1946
	Female	3438	13	803	66	714	19	56	106	100	51	30	1958	522	958
I. INFECTIVE AND PARASITIC DISEASES	Total	72	...	16	...	17	...	1	2	...	...	...	36	6	30
	Male	47	...	14	...	11	...	...	2	...	...	...	27	4	16
	Female	25	...	2	...	6	...	1	...	...	...	...	9	2	14
A 1 Tuberculosis of respiratory system	Male	22	...	7	...	4	...	...	2	...	...	...	13	1	8
A Active	Female	4	...	1	...	2	...	...	...	...	...	...	3	...	1
B Inactive	Male	20	...	7	...	3	...	...	1	...	...	...	11	1	8
	Female	3	...	...	...	2	...	...	...	...	...	...	2	...	1
A 2 Tuberculosis of meninges and central nervous system	Male	2	...	...	...	1	...	...	1	...	...	...	2	...	...
	Female	1	...	1	...	...	...	...	...	...	...	...	1	...	...
A 5 Tuberculosis, all other forms	Male	1	...	...	...	...	...	...	...	...	...	...	...	...	1
	Female	1	...	...	...	...	...	...	...	...	...	...	...	...	...
A 9 General paralysis of insane	Male	2	...	...	...	1	...	...	...	...	...	...	1	...	...
	Female	2	...	...	...	1	...	...	...	...	...	...	1	...	...
A 10 All other syphilis	Male	1	...	...	...	...	...	...	...	...	...	...	1	...	...
	Female	2	...	...	...	...	...	...	...	...	...	...	1	...	...
A 20 Septicaemia and pyaemia	Male	2	...	1	...	...	...	...	...	...	...	...	1	...	1
	Female	2	...	...	...	1	...	...	...	...	...	...	1	...	1
A 22 Whooping cough	Male	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Female	2	...	...	...	...	...	1	...	...	...	...	1	...	1
A 23 Meningococcal infections	Male	2	...	1	...	1	...	...	...	...	...	...	2	...	...
	Female	1	...	...	...	...	...	...	...	...	...	...	...	...	...
A 29 Acute infectious encephalitis	Male	2	...	1	...	1	...	...	...	...	...	...	2	...	1
	Female	1	...	...	...	1	...	...	...	...	...	...	1	...	...
A 30 Late effects of acute poliomyelitis and acute infectious encephalitis	Male	1	...	...	...	1	...	...	...	...	...	...	1	...	...
	Female	...	...	...	...	...	...	...	...	...	...	...	...	...	...
A 32 Measles	Male	1	...	...	...	...	...	...	...	...	...	...	...	1	...
	Female	8	...	...	...	...	...	...	...	...	...	...	...	1	7
A 34 Infectious hepatitis	Male	4	...	...	...	1	...	...	...	...	...	...	1	...	3
	Female	1	...	...	...	...	...	...	...	...	...	...	...	...	1
A 43 All other diseases classified as infective and parasitic	Male	6	...	3	...	1	...	...	...	...	...	...	4	1	1
	Female	1	...	1	...	...	...	...	...	...	...	...	1	...	...
II. NEOPLASMS	Total	1634	9	370	8	364	11	28	51	48	14	10	913	234	487
	Male	954	5	221	5	199	7	15	34	25	8	7	526	133	295
	Female	680	4	149	3	165	4	13	17	23	6	3	387	101	192
A 44 Malignant neoplasm of buccal cavity and Pharynx	Male	18	...	8	...	2	1	...	...	...	...	...	11	1	6
	Female	7	...	4	...	...	...	...	...	...	...	...	4	...	3
A 45 Malignant neoplasm of oesophagus	Male	19	...	6	...	4	...	...	...	...	...	...	10	4	5
	Female	7	...	1	...	4	...	...	...	...	...	...	5	...	2
A 46 Malignant neoplasm of stomach	Male	138	...	28	1	20	1	3	6	5	1	2	67	20	51
	Female	52	...	14	...	9	...	1	1	1	1	...	27	7	18
A 47 Malignant neoplasm of intestine, except rectum	Male	67	...	14	...	15	1	...	5	2	...	...	37	12	18
	Female	84	...	15	1	19	1	...	2	3	1	2	44	17	23
A 48 Malignant neoplasm of rectum	Male	40	...	10	...	10	...	1	2	...	...	1	24	4	12
	Female	23	...	7	...	7	...	...	...	1	...	...	15	3	5
A 49 Malignant neoplasm of larynx	Male	8	...	2	1	3	...	...	...	...	...	...	6	2	...
	Female	...	...	...	...	...	...	...	...	...	...	...	...	...	...
A 50 Malignant neoplasm of trachea, and of bronchus and lung not specified as secondary	Male	178	3	41	1	46	1	2	8	4	1	1	108	23	47
	Female	27	...	5	...	10	...	...	2	...	...	...	17	7	3
A 51 Malignant neoplasm of breast	Male	1	...	1	...	...	...	...	...	...	...	...	1	...	...
	Female	126	1	35	1	34	...	3	2	2	...	...	78	17	31
A 52 Malignant neoplasm of cervix uteri	Female	32	...	7	...	10	...	...	...	1	1	...	19	5	8
A 53 Malignant neoplasm of other and unspecified parts of uterus	Female	15	...	2	...	3	...	...	...	2	...	...	7	7	1
A 54 Malignant neoplasm of prostate	Male	109	...	27	...	21	1	...	1	4	4	1	59	18	32
A 55 Malignant neoplasm of skin	Male	14	...	3	...	4	...	...	...	...	...	...	7	...	7
	Female	16	1	3	...	2	...	...	1	1	...	...	8	...	8
A 56 Malignant neoplasm of bone and connective tissue	Male	11	...	2	1	3	...	...	...	...	...	...	7	1	3
	Female	8	...	4	...	1	...	...	...	1	...	...	6	...	2
A 57 Malignant neoplasm of all other and unspecified sites	Male	237	1	49	1	50	1	5	8	8	2	2	127	35	75
	Female	194	1	38	1	44	2	7	5	8	1	1	107	27	60
A Other digestive organs (155-159)	Male	107	1	20	1	24	...	1	3	2	1	1	54	17	36
	Female	65	...	8	...	17	2	1	2	3	...	...	33	9	23
B Other respiratory organs (160, 164, 165)	Male	3	...	1	...	...	...	...	...	...	...	...	1	1	1
	Female	1	...	...	...	...	...	...	...	...	...	...	...	...	...
C Urinary organs (180, 181)	Male	51	...	10	...	9	...	...	5	3	1	...	28	5	18
	Female	22	...	8	...	3	...	...	1	1	...	...	13	5	4
D Brain and other parts of nervous system (193)	Male	31	...	8	...	11	...	3	...	...	...	1	23	3	5
	Female	23	...	4	...	6	...	2	...	...	...	...	12	1	10

TABLE 7—CAUSE OF DEATH BY SEX, RURAL AND URBAN AND FOR URBAN PLACES OF 5,000 POPULATION AND OVER IN ALBERTA, 1964—Continued

CAUSE OF DEATH (Intermediate List)		SEX		(7th Rev.)														
		Total	Bowness	Calgary	Camrose	Edmonton	Grande Prairie	Jasper Place	Lethbridge	Medicine Hat	Red Deer	Wetaskiwin	Tl. urban places 5000 + populati'n	Other urban places 1000-4999 pop.	Residual (rural)			
E Other		Male 45		10		6	1	1		3			21	9	15			
		Female 83	1	18	1	18		4	2	4	1		49	12	22			
A 58 Leukaemia and aleukaemia		Male 52	1	12		8	1	1		1			24	9	19			
		Female 42		9		12		2	2	2	2		29	1	11			
A 59 Lymphosarcoma and other neoplasms of lymphatic and haematopoietic system		Male 53		15		11		2	3				31	4	18			
		Female 36	1	5		7			2	1		1	17	7	12			
A Hodgkin's disease (201)		Male 15		9		3		1					13		2			
		Female 5		1		2							3	1	1			
B Other		Male 38		6		8		1	3				18	4	16			
		Female 31	1	4		5			2	1		1	14	6	11			
A 60 Benign neoplasms and neoplasms of unspecified nature		Male 9		3		2		1		1			7		2			
		Female 11				3	1						4	3	4			
III, IV. ALLERGIC DISORDERS AND ENDOCRINE METABOLIC AND BLOOD DISEASES		Total 255	1	52	7	46	2	6	12	7	2	3	138	37	80			
		Male 148	1	33	6	32	2	2	7	1	1	1	86	16	46			
		Female 107		19	1	14		4	5	6	1	2	52	21	34			
A 61 Nontoxic goitre		Male																
		Female 1		1									1					
A 63 Diabetes mellitus		Male 82		16	4	19	2	1	3				45	11	26			
		Female 74		12	1	7		3	3	4	1	2	33	15	26			
A 64 Avitaminosis and other deficiency states		Male 4		1								1	2	1	1			
		Female 1											1					
A 65 Anaemias		Male 17		4	2	3					1		10		7			
		Female 11		2		2				2			6	3	2			
A 66 Alergic disorders; all other endocrine, metabolic and blood diseases		Male 45	1	12		10		1	4	1			29	4	12			
		Female 20		3		5		1	2				11	3	6			
V. MENTAL, PSYCHONEUROTIC, AND PERSONALITY DISORDERS		Total 20		3	2	4	1						10	2	8			
		Male 9		1	1	2	1						5		4			
		Female 11		2	1	2							5	2	4			
A 67 Psychoses		Male 5			1	1							2		3			
		Female 6		1	1	2							4	2				
A 68 Psychoneuroses and disorders of personality		Male 3		1		1	1						3					
		Female 2																
A 69 Mental deficiency		Male 1													1			
		Female 3		1									1		2			
VI. DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS		Total 996	3	241	15	183	5	16	44	37	12	11	567	153	276			
		Male 550	1	122	9	96	4	10	26	22	9	5	304	82	164			
		Female 446	2	119	6	87	1	6	18	15	3	6	263	71	112			
A 70 Vascular lesions affecting central nervous system		Male 489		108	9	80	3	9	24	18	8	4	263	77	149			
		Female 410	2	105	6	80	1	5	17	15	3	6	240	67	103			
A 71 Nonmeningococcal meningitis		Male 5							2				2		3			
		Female 2							1				1	1				
A 72 Multiple sclerosis		Male 7		4		1				1			6		1			
		Female 6		2		1		1					4	1	1			
A 73 Epilepsy		Male 10		3		3					1		7		3			
		Female 5		2									2		3			
A 78 All other diseases of the nervous system and sense organs		Male 39	1	7		12	1	1		3		1	26	5	8			
		Female 23		10		6							16	2	5			
VII. DISEASES OF THE CIRCULATORY SYSTEM		Total 3308	7	639	38	715	23	41	107	116	48	39	1773	561	974			
		Male 2220	4	402	21	462	16	27	66	76	30	28	1132	385	703			
		Female 1088	3	237	17	253	7	14	41	40	18	11	641	176	271			
A 79 Rheumatic fever		Male 1													1			
		Female 2													2			
A 80 Chronic rheumatic heart disease		Male 54		10	2	12												
		Female 47		9		8		3	4		1		29	6	19			
A 81 Arteriosclerotic and degenerative heart disease		Male 1850	3	316	18	383	13	24	55	61	27	25	925	337	588			
		Female 785	2	169	15	187	5	8	32	35	13	5	471	124	190			
A 82 Other diseases of heart		Male 100		27		17	1	1			2	2	50	18	32			
		Female 71	1	18		14			1	1	1	1	37	14	20			
A 83 Hypertension with heart disease		Male 40		8		8		1	2	6			25	5	10			
		Female 48		10	1	8		1	1		2	1	24	9	15			
A 84 Hypertension without mention of heart		Male 29		9		7			2	1			19	3	7			
		Female 27		6		6				2			14	8	5			
A 85 Diseases of arteries		Male 122	1	25	1	31	1	1	2	6		1	69	14	39			
		Female 88		22	1	25	2	2	2	1	1	4	60	14	14			
A 86 Other diseases of circulatory system		Male 24		7		4	1			1			15	2	7			
		Female 20		3		5			1	1			10		8			

CAUSE OF DEATH (Intermediate List)		SEX	7th Rev.)													
			Total	Bowness	Calgary	Camrose	Edmonton	Grande Prairie	Jasper Place	Lethbridge	Medicine Hat	Red Deer	Wetaskiwin	Tl. urban places 5000 + population	Other urban places 1000-4999 pop.	Residual (rural)
VIII. DISEASES OF THE RESPIRATORY SYSTEM		Total	593	3	106	55	125	4	11	14	10	11	1	340	88	165
		Male	383	2	71	33	89	3	7	9	7	4	1	226	49	108
		Female	210	1	35	22	36	1	4	5	3	7	...	114	39	57
A 88	Influenza	Male	7	...	1	1	1	...	...	...	...	...	...	3	1	1
		Female	5	...	1	1	...	...	...	...	...	...	...	2	2	1
A 89	Lobar pneumonia	Male	20	...	3	...	2	1	...	...	...	...	...	6	5	9
		Female	7	...	1	...	1	...	1	...	...	...	...	3	1	3
A 90	Bronchopneumonia	Male	142	...	30	31	21	...	2	3	3	1	...	91	19	32
		Female	119	...	19	20	20	1	3	...	2	5	...	70	23	26
A 91	Primary atypical, other and unspecified pneumonia	Male	69	1	7	...	26	1	2	...	...	2	1	40	7	22
		Female	46	1	8	1	9	...	1	2	...	2	...	24	7	15
A 92	Acute bronchitis	Male	3	...	...	...	...	...	...	...	...	...	...	...	...	3
		Female	2	...	...	...	...	...	...	...	...	...	...	...	...	1
A 93	Bronchitis, chronic and unqualified	Male	64	1	14	...	18	1	2	4	4	...	...	44	7	13
		Female	5	...	1	...	...	...	2	...	...	...	...	3	...	2
A 95	Empyema and abscess of lung	Male	8	...	1	...	...	...	1	...	...	1	...	3	1	4
		Female	2	...	1	...	1	...	...	...	...	...	...	2	...	...
A 96	Pleurisy	Male	2	...	...	...	1	...	...	...	...	...	...	1	1	...
		Female	...	...	...	...	...	...	...	...	...	...	...	...	...	...
A 97	All other respiratory diseases	Male	68	...	15	1	20	...	...	2	...	...	...	38	8	22
		Female	24	...	4	...	5	...	...	...	1	...	...	10	5	9
IX. DISEASES OF THE DIGESTIVE SYSTEM		Total	385	1	93	10	56	1	4	12	12	8	6	203	51	131
		Male	234	1	54	9	30	...	3	8	5	8	2	120	24	90
		Female	151	...	39	1	26	1	1	4	7	...	4	83	27	41
A 99	Ulcer of stomach	Male	23	1	5	...	3	...	1	...	...	...	...	10	3	10
		Female	7	...	4	...	...	...	...	...	...	...	...	4	1	2
A100	Ulcer of duodenum	Male	23	...	7	2	4	...	...	...	1	...	...	14	2	7
		Female	10	...	3	...	1	...	...	1	1	...	...	6	2	2
A101	Gastritis and duodenitis	Male	4	...	...	1	1	...	...	...	...	...	...	2	...	2
		Female	2	...	...	...	...	...	...	...	...	...	...	...	...	2
A102	Appendicitis	Male	13	...	1	...	...	...	...	...	...	1	...	2	2	9
		Female	7	...	1	...	1	...	...	...	...	...	...	2	2	3
A103	Intestinal obstruction and hernia	Male	39	...	7	1	5	...	1	3	...	2	1	20	4	15
		Female	29	...	7	...	7	...	...	1	1	...	1	17	6	6
A104	Gastro-enteritis and colitis, except diarrhoea of the newborn	Male	28	...	4	1	2	...	...	2	1	...	...	11	4	13
		Female	16	...	4	...	1	...	...	...	...	...	...	5	4	7
A105	Cirrhosis of liver	Male	45	...	19	...	10	...	1	...	1	1	...	32	2	11
		Female	26	...	10	...	3	...	...	1	2	...	...	16	4	6
A106	Cholelithiasis and cholecystitis	Male	19	...	2	1	1	...	1	1	1	...	...	7	5	7
		Female	22	...	4	1	5	...	...	1	1	...	1	13	5	4
A107	Other diseases of digestive system	Male	40	...	9	3	4	...	...	2	1	3	...	22	2	16
		Female	32	...	6	...	8	1	1	...	2	...	2	20	3	9
X. DISEASES OF THE GENITO-URINARY SYSTEM		Total	142	...	29	1	22	1	1	9	4	2	3	72	21	49
		Male	100	...	16	...	16	...	1	8	3	2	3	49	15	36
		Female	42	...	13	1	6	1	...	1	1	...	...	23	6	13
A108	Acute nephritis	Male	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Female	3	...	2	...	...	...	...	...	...	...	...	2	...	1
A109	Chronic, other and unspecified nephritis	Male	29	...	9	...	3	...	...	1	...	...	1	14	3	12
		Female	20	...	7	1	1	1	...	...	1	...	...	11	5	4
A110	Infections of kidney	Male	26	...	4	...	6	...	...	2	...	...	1	13	6	7
		Female	15	...	3	...	5	...	...	1	...	...	...	9	...	6
A111	Calculi of urinary system	Male	4	...	...	...	1	...	...	...	...	1	...	2	...	2
		Female	...	...	...	...	...	...	...	...	...	...	...	...	...	...
A112	Hyperplasia of prostate	Male	29	...	1	...	3	...	1	3	3	1	1	13	6	10
A114	Other diseases of genito-urinary system	Male	12	...	2	...	3	...	...	2	...	...	...	7	...	5
		Female	4	...	1	...	...	...	...	...	...	...	...	1	1	2
XI. DELIVERIES AND COMPLICATIONS OF PREGNANCY, CHILDBIRTH, AND THE PUERPERIUM		Total	8	...	1	...	...	...	...	1	...	...	...	2	3	3
A117	Haemorrhage of pregnancy and childbirth	Female	1	...	...	...	...	...	...	...	...	...	...	...	1	...
A119	Abortion with sepsis	Female	3	...	...	...	...	...	...	...	...	...	...	...	1	2
A120	Other complications of pregnancy, childbirth and the puerperium	Female	4	...	1	...	...	...	...	1	...	...	...	2	1	1
XII, XIII. DISEASES OF THE SKIN AND MUSCULO- SKELETAL SYSTEM		Total	41	...	8	...	10	...	2	2	...	1	...	23	6	12
		Male	18	...	2	...	5	...	1	...	...	1	...	9	3	6
		Female	23	...	6	...	5	...	1	2	...	...	...	14	3	6
A121	Infections of skin and subcutaneous tissue	Male	3	...	...	...	1	...	...	...	...	1	...	2	1	...
		Female	1	...	...	...	...	...	...	...	...	...	...	...	...	...

TABLE 7—CAUSE OF DEATH BY SEX, RURAL AND URBAN AND FOR URBAN PLACES OF 5,000 POPULATION AND OVER IN ALBERTA, 1964—Continued

CAUSE OF DEATH (Intermediate List)		SEX	Total	Bowness	Calgary	Camrose	Edmonton	Grande Prairie	Jasper Place	Lethbridge	Medicine Hat	Red Deer	Wetaskiwin	Tl. urban places 5000 + populat'n	Other urban places 1000-4999 pop.	Residual (rural)
(7th Rev.)																
A122 Arthritis and syondylitis	Male	5					2							2	2	1
	Female	11		4			3		1	1				9	1	1
A123 Muscular rheumatism and rheumatism, unspecified	Male															
	Female	1		1										1		
A126 All other diseases of skin and musculoskeletal system	Male	10		2			2		1					5		5
	Female	10		1			2			1				4	2	4
XIV. CONGENITAL MALFORMATIONS	Total	173	1	35			43	3	5	4	2	8	1	102	22	49
	Male	98	1	25			25	3	1	1	2	3		61	14	23
	Female	75		10			18		4	3		5	1	41	8	26
A127 Spina bifida and meningocele	Male	8					1				1	2		4	2	2
	Female	7							1				1	2	1	4
A Without hydrocephalus	Male	4										1		1	1	2
	Female	3											1	1	1	1
B With hydrocephalus	Male	4					1				1	1		3	1	
	Female	4							1					1		3
A128 Congenital malformations of circulatory system	Male	46	1	13			14	3			1	1		33	4	9
	Female	32		7			8		2			2		19	1	12
A129 All other congenital Malformations	Male	44		12			10		1	1				24	8	12
	Female	36		3			10		1	3		3		20	6	10
XV. CERTAIN DISEASES OF EARLY INFANCY	Total	542	3	123	2		101	3	14	12	6	11	2	277	89	176
	Male	325	3	69	2		62	1	8	8	4	6	1	164	57	104
	Female	217		54			39	2	6	4	2	5	1	113	32	72
A130 Birth injuries	Male	44		7			6	1	1	1				16	11	17
	Female	27		4			4		1	1		1		11	3	13
A131 Postnatal asphyxia and atelectasis	Male	87		14	1		24		3	3	1	2		48	11	28
	Female	46		6			14		2	1	2	3		28	3	15
A132 Infections of the newborn	Male	25		3			3		3					9	6	10
	Female	11		3			2							5	2	4
A133 Haemolytic disease of newborn	Male	10					3					2		5	2	3
	Female	5		1			1		1					3	1	1
A134 All other defined diseases of early infancy	Male	10		2							1			3	3	4
	Female	6													1	5
A135 Ill-defined diseases peculiar to early infancy, and immaturity unqualified.	Male	149	3	43	1		26		1	4	2	2	1	83	24	42
	Female	122		40			18	2	2	2		1	1	66	22	34
XVI. SYMPTOMS, SENILITY, AND ILL-DEFINED CONDITIONS	Total	311	6	197	19		24			1		2	1	250	20	41
	Male	213	3	136	10		14			1		2		166	13	34
	Female	98	3	61	9		10						1	84	7	7
A136 Senility without mention of psychosis	Male	54	2	30			8					1		41	2	11
	Female	36		24			7							31	2	3
A137 Ill-defined and unknown causes	Male	159	1	106	10		6			1		1		125	11	23
	Female	62	3	37	9		3						1	53	5	4
EXVII. ACCIDENTS, POISONINGS AND VIOLENCE (CLASSIFICATION ACCORDING TO EXTERNAL CAUSE)	Total	1002	6	175	18		174	12	13	16	13	18	4	449	130	423
	Male	745	6	119	13		127	10	11	11	10	12	3	322	106	317
	Female	257		56	5		47	2	2	5	3	6	1	127	24	106
AE138 Motor vehicle accidents	Male	271		50	3		46	4	3	5	3	5	2	121	40	110
	Female	100		18			21	1	1		2	2		45	9	46
A Traffic accidents (810-825)	Male	261		50	3		45	4	3	5	3	5	2	120	37	104
	Female	99		18			21	1	1		2	2		45	9	45
B Non-traffic accidents	Male	10					1							1	3	6
	Female	1												1		1
AE139 Other transport accidents	Male	29		4			12			1		2		19	3	7
	Female															
A Submersion of occupant of small boat (850)	Male	6					1					1		2	2	2
	Female															
C Other	Male	23		4			11			1		1		17	1	5
	Female															
AE140 Accidental poisoning	Male	33		8			8		1					17	5	11
	Female	15		4			2	1				2		9	2	4
AE141 Accidental falls	Male	63	1	11	9		9		1	1	3			35	15	13
	Female	42		11	4		7			3		1		26	6	10
AE142 Accident caused machinery	Male	27							1	1				2	3	22
	Female	2					1							1		1
AE143 Accident caused by fire and explosion of combustible material	Male	52		15			6			1		1		23	1	28
	Female	20		5			1							6	1	13
AE144 Accident caused by hot substance, corrosive liquid, steam, and radiation	Male											1				
	Female	1												1		
AE145 Accident caused by firearm	Male	16		3	1									4	1	11
	Female	1														1

TABLE 7—CAUSE OF DEATH BY SEX, RURAL AND URBAN AND FOR URBAN PLACES OF 5,000 POPULATION AND OVER IN ALBERTA, 1964—Continued

CAUSE OF DEATH (Intermediate List) (7th Rev.)	SEX															Total	Bowness	Calgary	Camrose	Edmonton	Grande Prairie	Jasper Place	Lethbridge	Medicine Hat	Red Deer	Wetaskiwin	Tl. urban places 5000 + population	Other urban places 1000-4999 pop.	Residual (rural)
AE146 Accidental drowning	Male	37	1	4				3	1	1	1	2			13	7	17												
	Female	12		1	1			3							5		7												
AE147 All other accidental causes	Male	79	1	10				9	3			1	3		27	16	36												
	Female	23		2				6						1	9	2	12												
AE148 Suicide	Male	126	3	13				31	2	3	1	1	1	1	56	13	57												
	Female	31		13				5		1	2		1		22	3	6												
AE149 Homicide and injury purposely inflicted by other persons (not in war)	Male	12		1				3		1					5	2	5												
	Female	10		2				1							3	1	6												
NXVII. ACCIDENTS, POISONINGS AND VIOLENCE (CLASSIFICATION ACCORDING TO NATURE OF INJURY)	Total	1002	6	175	18	174	12	13	16	13	18	4	449	130	423														
	Male	745	6	119	13	127	10	11	11	10	12	3	322	106	317														
	Female	257		56	5	47	2	2	5	3	6	1	127	24	106														
AN138 Fracture of skull	Male	154	1	23	1	22	3		3	2	3	2	60	27	67														
	Female	43		9		7	1	1		1		1	19	4	20														
AN139 Fracture of spine and trunk	Male	37	1	5	1	2	1		1	2	2		15	4	18														
	Female	15		3	1	4			1				9		6														
AN140 Fracture of limbs	Male	34	1	5	8	3		2			1		20	7	7														
	Female	30		8	3	3			2		1		17	5	8														
AN141 Dislocation without fracture	Male	1																											
	Female	1													1														
AN143 Head injury (excluding fracture)	Male	98		16	2	19		2	1		1	1	42	9	47														
	Female	18		1		2				1	1		5	2	11														
AN144 Internal injury of chest, abdomen, and pelvis	Male	158		26	1	37	2	3	3	4	1		77	25	56														
	Female	44		10		13				1			24	4	16														
AN145 Laceration and open wounds	Male	22	1	2		1							4	6	12														
	Female	3				1							1		2														
AN146 Superficial injury, contusion and crushing with intact skin surface	Male	1													1														
	Female	1																											
AN147 Effects of foreign body entering through orifice	Male	13		2		3	1						6	3	4														
	Female	13		1		4						1	6		7														
AN148 Burns	Male	49		11		5			1		1		18	1	30														
	Female	21		3		1					1		5	2	14														
AN149 Effects of poisons	Male	67		17		19	1	3					40	6	21														
	Female	36		14		6	1		1		2		24	4	8														
AN150 All other and unspecified effects of external causes	Male	112	2	12		16	2	1	2	2	3		40	18	54														
	Female	33		7	1	6		1	1		1		17	3	13														

TABLE 8—DEATHS, BY CAUSE AND SEX, BY AGE, ALBERTA, 1964

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TABLE 8—DEATHS, BY CAUSE AND SEX, BY AGE, ALBERTA, 1964 (Continued)

CAUSE OF DEATH (Intermediate List)	SEX	AGE																	Total								
		—1 year																									
		7 - 27 days	28 + days	Total	1 year	2 years	3 years	4 years	5-9 years	10-14 years	15-19 years	20-24 years	25-29 years	30-34 years	35-39 years	40-44 years	45-49 years	50-54 years		55-59 years	60-64 years	65-69 years	70-74 years	75-79 years	80-84 years	85 +	Not stated
A 43 All other diseases classified as infective and parasitic	Male	6			1	2														1	1						
	Female	1																									
	Total	1634																									
II. NEOPLASMS	Male	954																									
	Female	680																									
A 44 Malignant neoplasm of buccal cavity and pharynx	Male	18																									
	Female	7																									
A 45 Malignant neoplasm of oesophagus	Male	19																									
	Female	138																									
A 46 Malignant neoplasm of stomach	Male	52																									
	Female	67																									
A 47 Malignant neoplasm of Intestine, except rectum	Male	84																									
	Female	40																									
A 48 Malignant neoplasm of rectum	Male	23																									
	Female	23																									
A 49 Malignant neoplasm of larynx	Male	8																									
	Female																										
A 50 Malignant neoplasm of trachea, and of bronchus and lung not specified as secondary	Male	178																									
	Female	27																									
A 51 Malignant neoplasm of breast	Male	1																									
	Female	126																									
A 52 Malignant neoplasm of cervix uteri	Female	32																									
A 53 Malignant neoplasm of other and unspecified parts of uterus	Female	15																									
	Female																										
A 54 Malignant neoplasm of prostate	Male	109																									
	Male	14																									
A 55 Malignant neoplasm of skin	Female	16																									
	Male	11																									
A 56 Malignant neoplasm of bone and connective tissue	Female	8																									

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TABLE 8—DEATHS, BY CAUSE AND SEX, BY AGE, ALBERTA, 1964 (Continued)

CAUSE OF DEATH (Intermediate List)	SEX	AGE																85 +	Not stated											
		—1 year				Total	1 year	2 years	3 years	4 years	5-9 years	10-14 years	15-19 years	20-24 years	25-29 years	30-34 years	35-39 years			40-44 years	45-49 years	50-54 years	55-59 years	60-64 years	65-69 years	70-74 years	75-79 years	80-84 years		
		7-27 days	28 + days	Total																										
					Total																									
X. DISEASES OF THE GENITO-URINARY SYSTEM	Total	142																												
	Male	100																												
	Female	42																												
	Male	3																												
	Female	29																												
	Female	20																												
	Male	26																												
	Female	15																												
	Male	4																												
	Female	29																												
XI. DELIVERIES AND COMPLICATIONS OF PREGNANCY, CHILD- BIRTH, AND THE PUERPERIUM	Male	12																												
	Female	4																												
	Total	8																												
	Female	1																												
	Female	3																												
	Female	4																												
	Female	41	5	5																										
	Male	18		2																										
	Female	23		3																										

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Total accidents (AE138-AE147)	Male Female	607 216	1 3	23 14	24 17	13 9	10 5	10 5	10 5	23 9	19 10	48 14	81 14	38 8	43 6	39 10	34 12	36 11	26 11	25 9	26 6	14 4	28 12	26 17	20 13	14 14
AE148 Suicide	Male Female	126 31	...	...	...	...	...	...	...	...	1	6	7	9	14	13	11	11	8	18	8	10	3	4	2	1
AE149 Homicide and injury purposely inflicted by other persons (not in war)	Male Female	12 10	1	...	1	...	...	...	...	1	...	1	...	2	1	1	...	1	2	...	...	2	...	1	...	...
NXVII. ACCIDENTS, POISON- INGS AND VIOLENCE (CLASSIFICATION ACCORDING TO NATURE OF INJURY)	Total Male Female	1002 745 257	3 3	2 2	37 23 14	42 25 17	22 13 9	15 10 5	15 10 5	33 20 10	30 20 10	69 55 14	106 88 18	62 49 13	66 58 8	71 53 18	62 45 17	61 48 13	51 36 15	58 43 15	41 34 7	31 26 5	44 31 13	48 31 17	36 22 14	29 15 14
AN138 Fracture of skull	Male Female	154 43	...	...	...	3	2	1	1	6	4	16	27	12	17	14	9	9	8	4	5	4	5	2	1	1
AN139 Fracture of spine and trunk	Male Female	37 15	...	2	...	...	1	...	...	4	1	3	4	2	1	4	3	5	...	3	2	2	2	1	2	2
AN140 Fracture of limbs	Male Female	34 30	...	...	...	...	...	...	...	1	2	1	1	1	1	...	...	...	...	...	...	1	3	8	6	11
AN141 Dislocation without fracture	Male Female	1 98	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
AN143 Head injury (excluding fracture)	Male Female	18 158	...	...	...	1	1	...	...	2	1	9	13	9	3	9	3	10	8	13	4	4	5	3	1	1
AN144 Internal injury of chest, abdomen, and pelvis	Male Female	44 22	...	1	1	1	1	1	1	5	5	10	26	15	14	11	10	12	9	10	7	5	5	3	4	2
AN145 Laceration and open wounds	Male Female	22 3	...	...	...	...	1	...	...	3	3	3	1	1	2	1	1	1	3	4	1	2	1	...	...	1
AN146 Superficial injury, contusion and crushing with intact skin surface	Male Female	1 13	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
AN147 Effects of foreign body entering through orifice	Male Female	13 49	2	8	10	2	3	3	3	...	...	1	...	...	1	...	...	...	...	...	1	...	1	1	1	...
AN148 Burns	Male Female	21 67	...	...	...	1	3	3	3	4	2	2	3	1	2	1	3	4	2	3	4	3	2	5	1	...
AN149 Effects of poisons	Male Female	36 112	...	...	...	...	1	1	1	...	...	5	3	4	9	7	11	6	3	7	1	1	4	2	1	1
AN150 All other and unspecified effects of external causes	Male Female	33 ...	1	3	4	3	6	6	7	7	6	8	6	5	5	4	3	6	5	3	5	2	1

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[illegible]

TABLE 10—DEATHS, BY CAUSE AND SEX, BY AGE, CALGARY, 1964 (Continued)

CAUSE OF DEATH (Intermediate List) (7th Rev.)	SEX	AGE														Not stated									
		Total	Under 1 year	1 year	2 years	3 years	4 years	5-9 years	10-14 years	15-19 years	20-24 years	25-29 years	30-34 years	35-39 years	40-44 years		45-49 years	50-54 years	55-59 years	60-64 years	65-69 years	70-74 years	75-79 years	80-84 years	85 +
XIV. CONGENITAL MALFORMATIONS	Total	35	24	1	2	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Male	25	16	1	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Female	10	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
A128 Congenital malformations of circulatory system	Male	13	9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
A129 All other congenital malformations	Male	7	5	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Female	12	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Female	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
XV. CERTAIN DISEASES OF EARLY INFANCY	Total	123	123	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Male	69	69	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Female	54	54	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
A130 Birth injuries	Male	7	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Female	4	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
A131 Postnatal asphyxia	Male	14	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Female	6	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
A132 Infections of the newborn	Male	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Female	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
A133 Haemolytic disease of newborn	Male	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Female	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
A134 All other defined diseases of early infancy	Male	43	43	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Female	40	40	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
A135 Ill-defined diseases peculiar to early infancy, and immaturity unqualified	Male	197	15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Female	136	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
XVI. SYMPTOMS, SENILITY, AND ILL-DEFINED CONDITIONS	Total	61	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Male	30	30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Female	24	24	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
A136 Senility without mention of psychosis	Male	106	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Female	37	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
A137 Ill-defined and unknown causes	Total	175	3	5	1	4	4	7	1	11	23	12	11	8	13	9	6	8	7	5	10	12	8	4	7
	Male	119	1	2	3	3	4	5	1	9	19	8	10	4	9	5	5	6	4	6	7	3	4	4	4
	Female	56	2	3	1	1	1	2	2	2	4	4	1	4	4	4	1	2	1	1	3	9	4	3	3
XVII. ACCIDENTS, POISONINGS AND VIOLENCE (CLASSIFICATION ACCORDING TO EXTERNAL CAUSE)	Total	50	1	1	1	1	1	1	1	5	15	6	3	1	6	3	1	1	1	1	4	4	1	1	1
	Male	18	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	3	3	1	1	1
	Female	32	1	1	1	1	1	1	1	3	10	5	2	1	5	2	1	1	1	1	1	1	1	1	1
AE138 Motor vehicle accidents	Total	18	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Male	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Female	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

[illegible]

TABLE 11—DEATHS, BY CAUSE AND SEX, BY MARITAL STATUS AND AGE, ALBERTA, 1964

CAUSE OF DEATH (Intermediate List) (7th Rev.)	SEX	SINGLE								MARRIED								WIDOWED AND DIVORCED										
		Total	Under 15 years	15-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-69 years	70 +	Total	15-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-69 years	70 +	Total	15-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-69 years	70 +	Not stated	
ALL CAUSES	Total Male Female	9482 6044 3438	1157 692 465	1133 965 168	191 151 40	64 57 7	72 56 16	79 61 18	164 150 14	107 95 12	456 395 61	4617 3305 1312	41 23 18	147 90 57	301 182 119	593 383 200	924 639 285	584 426 158	2027 1552 475	2539 1050 1489	3 1 2	10 6 4	20 9 11	45 22 23	147 70 77	160 61 99	2154 881 1273	36 32 4
I. INFECTIVE AND PARASITIC DISEASES	Total Male Female	72 47 25	26 11 15	19 17 2			4 2 2	3 3 1	6 6 2	2 2 4	4 4 4	19 14 5		1 1 1	1 1 1	3 2 1	3 3 1	4 3 1	7 5 2	8 5 3				1 1 1	1 1 1	1 1 1	5 3 2	
A 1 Tuberculosis of respiratory system	Male Female	22 4	1 1	11 10			2 1	1 1	3 2	1 1	4 4	7 6				2 1	1 1	1 1	3 2	3 3				1 1			2 1	
A Active	Male Female	20 3	1 1	10 1			2 1	1 1	2 1	1 1	4 4	6 9				2 1	1 1	1 1	1 1	1 1				1 1			2 1	
B Inactive	Male Female	2 1		1 1				1 1	1 1			1 1				1 1			1 1									
A 2 Tuberculosis of meninges and central nervous system	Male Female	1 2	1 2	1 2																								
A 5 Tuberculosis, all other forms	Male Female	2 2										1 1								1 1								
A 9 General paralysis	Male Female	2 2										1 1							1 1	1 1								
A 10 All other syphilis	Male Female	3 2		2 1					1 1	1 1		1 1																
A 20 Septicaemia and pyaemia	Male Female	2 2	2 2	1 1					1 1			1 1																
A 22 Whooping cough	Male Female	2 2	2 2																									
A 23 Meningococcal infections	Male Female	2 1	2 1																									
A 29 Acute infectious encephalitis	Male Female	1 2	1 2																									
A 30 Late effects of acute poliomyelitis and acute infectious encephalitis	Male Female	1 1	1 1	1 1				1 1																				
A 32 Measles	Male Female	1 8	1 7	1 1																								
A 34 Infectious hepatitis	Male Female	4 1	1 1									3 1		1 1					2 1									

Not stated

A 43 All other diseases classified as
infective and parasitic

II. NEOPLASMS

[illegible]

1—Includes 32 'Separated'.

TABLE 11—DEATHS, BY CAUSE AND SEX, BY MARITAL STATUS AND AGE, ALBERTA, 1964 (Continued)

CAUSE OF DEATH (Intermediate List) (7th Rev.)	SEX	SINGLE							MARRIED ¹							WIDOWED AND DIVORCED							Not stated					
		Total	Under 15 years	Total						Total	15-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-69 years	70 +	Total	15-24 years	25-34 years	35-44 years	45-54 years		55-64 years	65-69 years	70 +		
				15-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-69 years																		70 +	
B Other	Male	38	1	7	1							4	25			2	8	4	4	7	5				1			4
	Female	31	1	1									19			3	1	2	6	6	10				2			8
	Male	9	1	1									5			1	1	1	1	1	1				1			1
	Female	11		3	2	1							4				2		2		4					1		3
III, IV. ALLERGIC DISORDERS AND ENDOCRINE METABOLIC AND BLOOD DISEASES	Total	255	10	24	1	1	3	2	2	2	13	131			3	4	5	13	22	62	89				1	3	6	79
	Male	148	6	21	1	1	2	2	2	2	11	84			2	3	2	6	13	11	47	36			1	1	1	34
	Female	107	4	3			1				2	47			1	1	3	7	9	11	15	53			1	2	5	45
	Male												1															
A 61 Nontoxic goitre	Female	1																										
A 63 Diabetes mellitus	Male	82		9		1	1				6	47		1	3	1	3	6	6	27	25				2	4		25
A 64 Avitaminosis and other deficiency states	Female	74		1							1	33		1	1	1	3	8	8	13	40						34	
A 65 Anaemias	Male	4		2							1	1								1	1						1	
A 66 Allergic disorders; all other endocrine, metabolic and blood diseases	Female	1																									1	
V. MENTAL, PSYCHONEUROTIC AND PERSONALITY DISORDERS	Male	17	1	4		1					2	10		1	1	1	1		2	5	2				1	1	7	
	Female	11	3	1		1					2	26		1	2	7	3	7	3	14	8				1	1	3	
	Male	45	5	6	1						1	13		1	3	3	3	1	3	2	5				2	1	3	
	Female	20	1	1																								
VI. DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS	Total	20	4	4							1	6								2	6				2	1	3	
	Male	9	1	4							1	4								1	2				2	1	3	
	Female	11	3									2																
	Male	5		3							1	2																
A 67 Psychoses	Female	6										1																
A 68 Psychoneuroses and disorders of personality	Male	3		1								2																
A 69 Mental deficiency	Female	2	1									1																
VII. DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS	Male	3	3																									
	Total	996	17	111	2	4	6	10	14	13	62	483			3	15	36	69	56	304	383				1	15	17	347
	Male	530	11	90	2	4	5	6	13	10	50	316			1	7	19	43	39	207	131				1	5	4	120
	Female	446	6	21			1	4	1	3	12	167			2	8	17	26	17	97	252				2	10	13	227
A 70 Vascular lesions affecting central nervous system	Male	489	2	77		2	2	4	11	10	48	281			1	4	15	31	35	195	127				1	4	4	117
	Female	410	1	18		1	1	2	1	2	12	152			2	6	13	22	16	98	239					8	11	218

TABLE 11—DEATHS, BY CAUSE AND SEX, BY MARITAL STATUS AND AGE, ALBERTA, 1964 (Continued)

CAUSE OF DEATH (Intermediate List) (7th Rev.)	SEX	SINGLE							MARRIED¹							WIDOWED AND DIVORCED							Not stated					
		Total	Under 15 years	15-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-69 years	70 +	Total	15-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-69 years	70 +	Total	15-24 years	25-34 years	35-44 years		45-54 years	55-64 years	65-69 years	70 +	
A133 Haemolytic disease of newborn A134 All other defined diseases of early infancy A135 Ill-defined diseases peculiar to early infancy, and immaturity unqualified	Male	10	10																									
	Female	5	5																									
	Male	10	10																									
	Female	6	6																									
	Male	149	149																									
XVI. SYMPTOMS, SENILITY, AND ILL-DEFINED CONDITIONS	Female	122	122																									
	Total	311	20	52	1	1	3	5	6	7	29	129	2	9	15	29	17	57	105									
	Male	213	11	45	1	1	3	5	5	7	23	103	2	7	11	23	15	45	50									
	Female	98	9	7					1		6	26		2	4	6	2	12	55									
	Male	54		7							7	24						24	22									
A136 Senility without mention of psychosis A137 Ill-defined and unknown causes	Female	36		1							1	8						8	26									
	Male	159	11	38	1	1	3	5	5	7	16	79	2	7	11	23	15	21	28									
	Female	62	9	6					1		5	18		2	4	6	2	4	29									
	Male	1002	167	281	145	41	26	13	15	6	35	451	28	79	100	88	73	19	64	101								
	Female	745	111	256	126	39	23	13	15	6	34	327	16	63	71	64	54	16	43	49								
EXVII. ACCIDENTS, POISONINGS AND VIOLENCE (CLASSIFICATION ACCORDING TO EXTERNAL CAUSE)	Male	257	56	25	19	2	3				1	124	12	16	29	24	19	3	21	52								
	Male	271	20	113	74	18	8	3	4	2	4	125	10	24	27	26	20	3	15	13								
	Female	100	16	15	12	2	1					55	5	10	13	11	9		7	14								
	Male	261	16	111	73	18	8	3	3	2	4	121	10	23	25	25	20	3	15	13								
	Female	99	15	15	12	2	1					55	5	10	13	11	9		7	14								
AE138 Motor vehicle accidents A Traffic accidents (810-825) B Non-traffic accidents	Male	10	4	2	1				1			4		1	2	1												
	Female	1	1																									
	Male	29	3	9	5	2	1		1			16	1	3	5	2	3		2	1								
	Female																											
	Male	6		3	3							3		2	1													
AE139 Other transport accidents A Submersion of occupant of small boat (850) C Other	Female	23	3	6	2	2	1		1			13	1	1	4	2	3		2	1								
	Male																											
	Female	33		13	5	3	4				1	19		2	7	5	2	1	2	1								
	Male	15	3	1	1							8	3		1				3									
	Female	63	4	29	5	1		1	1	2	19	18	2	2	1	2	2	1	12	9								
AE141 Accidental falls	Male	42	2	2							1	15	1	1					11	23								

TABLE 12—DEATHS BY CAUSE, SEX AND MONTH OF DEATH, ALBERTA, 1964

CAUSE OF DEATH (Intermediate List)		SEX	Total	MONTHS											
				January	February	March	April	May	June	July	August	September	October	November	December
ALL CAUSES		Total	9482	793	732	895	788	774	777	769	775	791	787	731	870
		Male	6044	512	450	561	500	512	483	479	489	501	516	481	560
		Female	3438	281	282	334	288	262	294	290	286	290	271	250	310
I. INFECTIVE AND PARASITIC DISEASES		Total	72	9	8	4	6	8	6	4	3	9	7	5	3
		Male	47	5	6	2	2	4	5	3	3	8	5	3	1
		Female	25	4	2	2	4	4	1	1	1	1	2	2	2
A 1	Tuberculosis of respiratory system	Male	22	4	2	1	2	4	1	2	2	2	1	1	1
		Female	4	1	1	1	1	1	1	1	1	1	1	1	1
A	Active	Male	20	3	2	1	2	4	1	2	1	2	1	1	1
		Female	3	1	1	1	1	1	1	1	1	1	1	1	1
B	Inactive	Male	2	1	1	1	1	1	1	1	1	1	1	1	1
		Female	1	1	1	1	1	1	1	1	1	1	1	1	1
A 2	Tuberculosis of meninges and central nervous system	Male	1	1	1	1	1	1	1	1	1	1	1	1	1
		Female	1	1	1	1	1	1	1	1	1	1	1	1	1
A 5	Tuberculosis, all other forms	Male	2	1	1	1	1	1	1	1	1	1	1	1	1
		Female	2	1	1	1	1	1	1	1	1	1	1	1	1
A 9	General paralysis of insane	Male	1	1	1	1	1	1	1	1	1	1	1	1	1
		Female	2	1	1	1	1	1	1	1	1	1	1	1	1
A 10	All other syphilis	Male	3	1	1	1	1	1	1	1	1	2	1	1	1
		Female	1	1	1	1	1	1	1	1	1	1	1	1	1
A 20	Septicaemia and pyaemia	Male	2	1	1	1	1	1	1	1	1	1	1	1	1
		Female	2	1	1	1	1	1	1	1	1	1	1	1	1
A 22	Whooping cough	Male	2	1	1	1	1	1	1	1	1	1	1	1	1
		Female	2	1	1	1	1	1	1	1	1	1	1	1	1
A 23	Meningococcal infections	Male	2	1	1	1	1	1	1	1	1	1	1	1	1
		Female	1	1	1	1	1	1	1	1	1	1	1	1	1
A 29	Acute infectious encephalitis	Male	2	1	1	1	1	1	1	1	1	1	1	1	1
		Female	1	1	1	1	1	1	1	1	1	1	1	1	1
A 30	Late effects of acute poliomyelitis and acute infectious encephalitis	Male	1	1	1	1	1	1	1	1	1	1	1	1	1
		Female	1	1	1	1	1	1	1	1	1	1	1	1	1
A 32	Measles	Male	1	1	1	1	1	1	1	1	1	1	1	1	1
		Female	8	1	1	1	4	2	1	1	1	1	1	1	1
A 34	Infectious hepatitis	Male	4	1	1	1	1	1	1	1	1	1	1	1	1
		Female	1	1	1	1	1	1	1	1	1	1	1	1	1
A 43	All other diseases classified as infective and parasitic	Male	6	2	1	1	1	1	1	1	1	1	1	1	1
		Female	1	1	1	1	1	1	1	1	1	1	1	1	1
II. NEOPLASMS		Total	1634	132	118	149	136	119	130	135	156	132	147	140	140
		Male	954	82	67	83	76	75	77	85	81	81	79	90	78
		Female	680	50	51	66	60	44	53	50	75	51	68	50	62
A 44	Malignant neoplasm of buccal cavity and pharynx	Male	18	2	1	1	2	1	2	3	1	1	3	1	4
		Female	7	1	1	1	4	1	1	1	1	1	1	1	2
A 45	Malignant neoplasm of oesophagus	Male	19	1	4	1	2	1	2	2	1	1	2	2	2
		Female	7	1	1	1	2	1	1	1	1	1	1	1	2
A 46	Malignant neoplasm of stomach	Male	138	14	11	10	13	12	10	18	12	8	12	14	4
		Female	52	5	6	8	8	5	6	6	6	4	3	1	4
A 47	Malignant neoplasm of intestine, except rectum	Male	67	7	3	6	3	5	5	4	5	4	4	14	7
		Female	84	8	4	5	6	5	7	3	11	10	7	5	13
A 48	Malignant neoplasm of rectum	Male	40	3	1	7	2	3	4	3	1	2	2	9	3
		Female	23	1	1	4	4	2	3	3	3	1	3	2	2
A 49	Malignant neoplasm of larynx	Male	8	1	1	1	1	3	1	1	1	1	1	1	2
		Female	1	1	1	1	1	1	1	1	1	1	1	1	1
A 50	Malignant neoplasm of trachea, and of bronchus and lung not specified as secondary	Male	178	19	9	14	15	16	11	17	14	24	16	13	10
		Female	27	1	1	3	1	1	1	1	3	2	6	3	4
A 51	Malignant neoplasm of breast	Male	1	1	1	1	1	1	1	1	1	1	1	1	1
		Female	126	8	6	12	7	6	13	7	21	10	14	8	14
A 52	Malignant neoplasm of cervix uteri	Male	32	4	5	4	4	3	1	2	1	2	2	2	2
A 53	Malignant neoplasm of other and unspecified parts of uterus	Female	15	1	1	1	1	1	2	1	2	1	2	2	2
A 54	Malignant neoplasm of prostate	Male	109	9	8	6	8	9	12	8	13	7	8	6	15
A 55	Malignant neoplasm of skin	Male	14	1	1	3	3	3	1	1	1	1	1	1	1
		Female	16	1	1	1	3	1	2	2	1	2	2	2	2
A 56	Malignant neoplasm of bone and connective tissue	Male	11	1	1	3	1	1	1	1	2	1	1	1	1
		Female	8	1	1	3	1	1	1	1	1	1	1	1	1
A 57	Malignant neoplasm of all other and unspecified sites	Male	237	17	20	20	16	13	21	20	18	26	21	22	23
		Female	194	8	19	26	16	17	15	15	17	13	21	17	10
A	Other digestive organs (155-159)	Male	107	6	11	8	11	5	10	5	11	13	10	7	10
		Female	65	2	6	9	6	3	2	7	10	5	11	2	2
B	Other respiratory organs (160, 164, 165)	Male	3	1	1	1	1	1	1	1	1	1	1	1	1
		Female	1	1	1	1	1	1	1	1	1	1	1	1	1
C	Urinary organs (180, 181)	Male	51	5	5	7	1	1	7	5	1	2	6	6	5
		Female	22	1	1	4	5	2	2	2	1	3	3	1	1
D	Brain and other parts of nervous system (193)	Male	31	2	1	1	3	3	2	3	4	6	1	3	2
		Female	23	1	2	3	1	4	2	2	2	1	1	6	2
E	Other	Male	45	3	3	4	1	4	2	7	1	5	3	6	6
		Female	83	6	11	10	5	8	9	6	4	7	6	6	5

61

TABLE 12—DEATHS BY CAUSE, SEX AND MONTH OF DEATH, ALBERTA, 1964—Continued

CAUSE OF DEATH (Intermediate List)	SEX	Total	MONTHS											
			January	February	March	April	May	June	July	August	September	October	November	December
A 58 Leukaemia and aleukaemia	Male	52	3	5	8	5	5	4	4	5	2	4	4	3
	Female	42	3	4	3	1	6	2	7	5	4	3	2	2
A 59 Lymphosarcoma and other neoplasms of lymphatic and haematopoietic system	Male	53	5	4	4	5	4	1	4	7	5	7	3	4
	Female	36	7	1	1	2	1	6	4	3	1	4	2	4
A Hodgkin's disease (201)	Male	15	1	2	1	1	...	...	2	3	...	3	...	1
	Female	5	...	1	...	...	...	1	1	1	...	1	...	...
B Other	Male	38	4	2	3	4	4	...	2	4	5	4	3	3
	Female	31	7	...	1	2	1	5	3	2	1	3	2	4
A 60 Benign neoplasms and neoplasms of unspecified nature	Male	9	...	...	...	1	1	2	...	2	1	...	2	...
	Female	11	2	1	...	1	1	...	1	2	1	1	1	...
III, IV. ALLERGIC DISORDERS AND ENDOCRINE METABOLIC AND BLOOD DISEASES	Total	255	27	21	26	16	16	24	20	24	23	19	18	21
	Male	148	14	13	12	11	9	13	11	15	12	13	10	15
	Female	107	13	8	14	5	7	11	9	9	11	6	8	6
A 61 Nontoxic goitre	Male	...	...	...	...	...	...	...	...	...	...	...	...	...
	Female	1	1	...	...	...	...	...	...	...	...	...	...	...
A 63 Diabetes mellitus	Male	82	3	6	9	5	4	9	9	9	5	6	7	10
	Female	74	9	5	10	2	6	8	4	8	7	4	5	6
A 64 Avitaminosis and other deficiency states	Male	4	2	...	1	...	...	...	1	...	...	...	...	...
	Female	1	1	...	...	...	...	...	...	...	...	...	...	...
A 65 Anaemias	Male	17	2	3	...	3	...	1	...	...	2	3	...	3
	Female	11	...	1	...	1	1	2	1	1	2	1	1	...
A 66 Allergic disorders; all other endocrine, metabolic and blood diseases	Male	45	7	4	2	3	5	3	1	6	5	4	3	2
	Female	20	2	2	4	2	...	1	4	...	2	1	2	...
V. MENTAL, PSYCHONEUROTIC, AND PERSONALITY DISORDERS	Total	20	...	1	...	1	2	1	2	6	2	3	1	1
	Male	9	...	...	...	...	1	1	1	2	...	2	1	1
	Female	11	...	1	...	1	1	...	1	4	2	1	...	...
A 67 Psychoses	Male	5	...	...	...	...	...	1	...	1	...	2	1	...
	Female	6	...	1	...	1	...	...	...	1	2	1	...	...
A 68 Psychoneuroses and disorders of personality	Male	3	...	...	...	...	...	...	1	1	...	...	...	...
	Female	2	...	...	...	...	...	...	1	1	...	...	...	...
A 69 Mental deficiency	Male	1	...	...	...	...	1	...	...	...	...	...	...	...
	Female	3	...	...	...	...	1	...	...	2	...	...	...	...
VI. DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS	Total	996	85	72	90	75	86	82	89	80	101	71	74	91
	Male	550	53	34	47	44	49	40	48	45	54	38	45	53
	Female	446	32	38	43	31	37	42	41	35	47	33	29	38
A 70 Vascular lesions affecting central nervous system	Male	489	51	27	44	35	43	33	43	41	49	36	40	47
	Female	410	30	37	34	28	36	39	38	32	40	32	28	36
A 71 Nonmeningococcal meningitis	Male	5	...	...	...	...	1	1	1	...	...	...	...	2
	Female	2	...	...	...	...	...	...	...	1	...	...	...	...
A 72 Multiple sclerosis	Male	7	...	...	...	...	2	1	1	1	...	2	...	...
	Female	6	...	...	3	1	...	...	1	...	1	...	...	...
A 73 Epilepsy	Male	10	1	1	1	...	1	2	1	1	1	...	...	1
	Female	5	1	...	1	...	...	...	2	...	...	...	...	1
A 78 All other diseases of the nervous system and sense organs	Male	39	1	6	2	9	2	3	2	2	4	2	3	3
	Female	23	1	1	5	2	1	3	...	2	6	1	...	1
VII. DISEASES OF THE CIRCULATORY SYSTEM	Total	3308	263	251	325	292	272	253	262	245	289	275	259	322
	Male	2220	177	163	216	194	187	170	169	167	191	191	173	222
	Female	1088	86	88	109	98	85	83	93	78	98	84	86	100
A 79 Rheumatic fever	Male	1	...	1	...	...	...	...	...	...	...	...	...	...
	Female	2	...	1	...	...	...	...	...	1	...	...	...	...
A 80 Chronic rheumatic heart disease	Male	54	2	5	2	...	8	6	5	5	2	8	3	8
	Female	47	1	3	6	3	5	2	2	4	2	11	3	5
A 81 Arteriosclerotic and degenerative heart disease	Male	1850	149	133	175	166	149	140	148	135	164	159	146	186
	Female	785	68	67	78	70	61	55	71	53	77	55	61	69
A 82 Other diseases of heart	Male	100	8	10	14	7	9	8	3	13	6	7	8	7
	Female	71	7	6	7	9	5	8	3	3	7	6	2	8
A 83 Hypertension with heart disease	Male	40	2	4	8	3	6	3	1	3	3	...	1	6
	Female	48	1	4	8	4	1	5	4	4	5	3	4	5
A 84 Hypertension without mention of heart	Male	29	3	4	2	5	2	2	1	1	2	...	3	4
	Female	27	1	1	1	2	4	3	4	2	2	2	3	2
A 85 Diseases of arteries	Male	122	11	6	10	10	12	11	10	9	9	13	12	9
	Female	88	8	4	7	8	8	9	7	9	1	6	12	9
A 86 Other diseases of circulatory system	Male	24	2	...	5	3	1	...	1	1	5	4	...	2
	Female	20	...	2	2	2	1	1	2	...	4	1	1	2
VIII. DISEASES OF THE RESPIRATORY SYSTEM	Total	593	58	56	76	60	40	47	40	39	35	50	37	55
	Male	383	37	33	48	40	25	29	27	31	21	35	24	33
	Female	210	21	23	28	20	15	18	13	8	14	15	13	22
A 88 Influenza	Male	7	2	1	2	...	...	1	...	...	...	...	...	...
	Female	5	1	...	2	1	...	...	...	...	...	...	...	...

TABLE 12—DEATHS BY CAUSE, SEX AND MONTH OF DEATH, ALBERTA, 1964—Continued

CAUSE OF DEATH (Intermediate List)	SEX	Total	MONTHS											
			January	February	March	April	May	June	July	August	September	October	November	December
A 89 Lobar pneumonia	Male	20	1	1	2	3	1	2	3	2	3	1		1
	Female	7		2				1				2		
A 90 Bronchopneumonia	Male	142	20	17	19	12	10	7	9	8	6	12	10	12
	Female	119	11	12	14	9	8	10	10	7	7	9	10	12
A 91 Primary atypical, other and unspecified pneumonia	Male	69	7	3	10	10	4	4	3	5	4	6	6	7
	Female	46	4	6	6	4	4	5	2	1	2	3	2	7
A 92 Acute bronchitis	Male	3		1								1		1
	Female	2			1								1	
A 93 Bronchitis, chronic and unqualified	Male	64	4	3	7	8	6	10	5	4	3	5	4	5
	Female	5			3	2								
A 95 Empyema and abscess of lung	Male	8		1	1				2		1	2		1
	Female	2				1	1							
A 96 Pleurisy	Male	2	1	1										
	Female													
A 97 All other respiratory diseases	Male	68	2	5	7	7	4	5	5	12	4	8	4	5
	Female	24	5	3	2	3	2	2	1		3	1		2
IX. DISEASES OF THE DIGESTIVE SYSTEM	Total	385	33	32	37	35	24	33	31	30	33	28	29	40
	Male	234	22	19	26	20	18	16	15	20	23	16	17	22
	Female	151	11	13	11	15	6	17	16	10	10	12	12	18
A 99 Ulcer of stomach	Male	23	3	1	3	1	3	3	1	1	2	2	3	
	Female	7	1			2		1	1				1	1
A100 Ulcer of duodenum	Male	23	1	4	2	3	1	1	2		1	2	3	3
	Female	10	1	1				1	1		1	1	1	3
A101 Gastritis and duodenitis	Male	4	1							1			1	1
	Female	2			1							1		
A102 Appendicitis	Male	13		2	2	2			4		3			
	Female	7		1		1		1	1	2				1
A103 Intestinal obstruction and hernia	Male	39	4	2	6	2	4	1	4	2	4		2	8
	Female	29	2	2	1	5	3	3	3	2	1	3	2	2
A104 Gastro-enteritis and colitis, except diarrhoea of the newborn	Male	28	2	1	2	3	2	3		3	6	3	1	2
	Female	16		1	1	1		1	2	3	2	2		3
A105 Cirrhosis of liver	Male	45	5	1	4	7	4	3	4	3	6	3	4	1
	Female	26	3	1	2	3	1	4	4		2	1	3	2
A106 Cholelithiasis and cholecystitis	Male	19	1	1			3	2		4		2	1	5
	Female	22	3	3	3			2	1	1	3	1	3	2
A107 Other diseases of digestive system	Male	40	5	7	7	2	1	3		6	1	4	2	2
	Female	32	1	4	3	3	2	4	3	2	1	3	2	4
X. DISEASES OF THE GENITO-URINARY SYSTEM	Total	142	15	12	11	11	13	16	12	11	11	13	9	8
	Male	100	9	6	10	9	11	10	9	7	7	10	7	5
	Female	42	6	6	1	2	2	6	3	4	4	3	2	3
A108 Acute nephritis	Male													
	Female	3									1			2
A109 Chronic, other and unspecified nephritis	Male	29		2	5	1	2	5	4	1		5	2	2
	Female	20	4	5		1	1	2	1	3	1	1		1
A110 Infections of kidney	Male	26	5		4	3	5	1	1	1	3	1	1	1
	Female	15	2		1	1	1	2	1	1	2	2		
A111 Calculi of urinary system	Male	4					2	1					1	
	Female													
A112 Hyperplasia of prostate	Male	29	3	2	1	4	2	3	2	2	3	4	2	1
A114 Other diseases of genito-urinary system	Male	12	1	2		1			2	3	1		1	1
	Female	4		1				2	1					
XI. DELIVERIES AND COMPLICATIONS OF PREGNANCY, CHILDBIRTH, AND THE PUERPERIUM	Total	8		2	1	1			1				2	1
A117 Hemorrhage of pregnancy and childbirth	Female	1		1										
A119 Abortion with sepsis	Female	3							1				1	1
A120 Other complications of pregnancy, childbirth and the puerperium	Female	4		1	1	1							1	
XII, XIII. DISEASES OF THE SKIN AND MUSCULO- SKELETAL SYSTEM	Total	41	4	3	3	7	6	4	4		3	1	5	1
	Male	18	1	1	2	4	4	2	1				2	1
	Female	23	3	2	1	3	2	2	3		3	1	3	
A121 Infections of skin and subcutaneous tissue	Male	3	1					2						
	Female	1												
A122 Arthritis and spondylitis	Male	5				2	2							1
	Female	11	3	1	1	1		2	1				2	
A123 Muscular rheumatism and rheumatism, unspecified	Male													
	Female	1		1										
A126 All other diseases of skin and musculoskeletal system	Male	10		1	2	2	2		1				2	
	Female	10				2	2		2		2	1	1	

TABLE 12—DEATHS BY CAUSE, SEX AND MONTH OF DEATH, ALBERTA, 1964—Continued

CAUSE OF DEATH (Intermediate List)	SEX	Total	MONTHS											
			January	February	March	April	May	June	July	August	September	October	November	December
XIV. CONGENITAL MALFORMATIONS	Total	173	12	11	21	14	22	18	19	13	8	6	11	18
	Male	98	6	6	10	7	12	8	9	10	6	6	7	11
	Female	75	6	5	11	7	10	10	10	3	2	...	4	7
A127 Spina bifida and meningocele	Male	8	1	...	1	1	...	2	1	...	1	1	...	...
	Female	7	...	1	2	1	...	1	1	...	...	...	...	1
A Without hydrocephalus	Male	4	...	...	...	1	...	1	1	...	1	...	...	...
	Female	3	...	...	1	1	...	...	...	...	...	...	...	1
B With hydrocephalus	Male	4	1	...	1	...	...	1	...	...	...	1	...	...
	Female	4	...	1	1	...	...	1	1	...	...	...	...	...
A128 Congenital malformations of circulatory system	Male	46	2	4	5	3	3	5	5	4	3	3	4	5
	Female	32	2	2	4	3	6	4	3	2	1	...	2	3
A129 All other congenital malformations	Male	44	3	2	4	3	9	1	3	6	2	2	3	6
	Female	36	4	2	5	3	4	5	6	1	1	...	2	3
XV. CERTAIN DISEASES OF EARLY INFANCY	Total	542	48	54	57	42	54	44	52	39	36	37	35	44
	Male	325	34	30	32	25	32	26	31	21	17	27	23	27
	Female	217	14	24	25	17	22	18	21	18	19	10	12	17
A130 Birth injuries	Male	44	8	4	4	5	1	5	6	2	...	3	3	3
	Female	27	...	10	1	1	1	3	2	2	4	...	...	3
A131 Postnatal asphyxia and atelectasis	Male	87	10	9	9	6	8	4	11	3	8	8	10	1
	Female	46	3	6	3	3	5	3	6	6	2	2	4	3
A132 Infections of the newborn	Male	25	1	1	2	3	4	2	1	3	...	2	2	4
	Female	11	1	1	...	1	2	3	1	...	1	1	...	...
A133 Haemolytic disease of newborn	Male	10	...	1	1	...	2	2	2	...	...	...	1	1
	Female	5	...	...	...	1	1	...	1	...	...	2	...	...
A134 All other defined diseases of early infancy	Male	10	1	...	1	1	1	...	...	1	2	...	3	...
	Female	6	1	...	1	1	...	1	1	...	...	...	1	...
A135 Ill-defined diseases peculiar to early infancy, and immaturity unqualified	Male	149	14	15	15	10	16	13	11	13	8	12	7	15
	Female	122	9	7	20	10	13	8	11	9	12	7	6	10
XVI. SYMPTOMS, SENILITY, AND ILL-DEFINED CONDITIONS	Total	311	29	28	25	18	27	28	24	23	23	26	25	35
	Male	213	23	21	17	15	17	21	16	13	16	18	15	21
	Female	98	6	7	8	3	10	7	8	10	7	8	10	14
A136 Senility without mention of psychosis	Male	54	4	4	4	3	3	4	3	5	6	11	4	3
	Female	36	2	2	2	1	1	5	2	6	1	1	7	6
A137 Ill-defined and unknown causes	Male	159	19	17	13	12	14	17	13	8	10	7	11	18
	Female	62	4	5	6	2	9	2	6	4	6	7	3	8
EXVII. ACCIDENTS, POISONINGS AND VIOLENCE (CLASSIFICATION ACCORDING TO EXTERNAL CAUSE)	Total	1002	78	63	70	74	85	91	74	106	86	104	81	90
	Male	745	49	51	56	53	68	65	54	74	65	76	64	70
	Female	257	29	12	14	21	17	26	20	32	21	28	17	20
AE138 Motor vehicle accidents	Male	271	14	16	13	18	25	19	16	38	32	36	27	17
	Female	100	16	5	6	2	5	12	10	18	7	10	5	4
A Traffic accidents (810-825)	Male	261	13	16	13	18	22	19	16	36	31	34	26	17
	Female	99	16	5	6	2	5	12	10	18	7	9	5	4
Non-traffic accidents	Male	10	1	...	...	...	3	...	...	2	1	2	1	...
	Female	1	...	...	...	...	...	...	...	...	1	...	...	...
AE139 Other transport accidents	Male	29	...	...	...	1	8	2	2	9	2	2	1	2
	Female	...	...	...	...	...	...	...	...	...	...	...	...	...
A Submersion of occupant of small boat (850)	Male	6	...	...	...	...	2	2	1	1	...	...	...	...
	Female	...	...	...	...	...	...	...	...	...	...	...	...	...
C Other	Male	23	...	...	...	1	6	...	1	8	2	2	1	2
	Female	...	...	...	...	...	...	...	...	...	...	...	...	...
AE140 Accidental poisoning	Male	33	6	2	5	2	2	1	2	1	2	3	2	5
	Female	15	3	...	2	1	1	1	1	...	2	1	1	2
AE141 Accidental falls	Male	63	6	3	7	2	6	7	4	7	4	3	8	6
	Female	42	2	2	1	6	2	3	3	5	6	7	2	3
AE142 Accident caused by machinery	Male	27	1	1	2	1	2	1	2	2	6	4	1	4
	Female	2	...	...	...	...	...	1	...	...	...	...	...	...
AE143 Accident caused by fire and explosion of combustible material	Male	52	8	6	2	3	2	5	4	1	3	6	3	9
	Female	20	2	2	3	3	1	1	...	...	2	2	2	2
AE144 Accident caused by hot substance, corrosive liquid, steam, and radiation	Male	...	...	...	...	...	...	...	...	1	...	...	...	...
	Female	1	...	...	...	...	...	...	...	...	...	...	...	...
AE145 Accident caused by firearm	Male	16	1	...	...	3	1	...	1	2	2	3	3	...
	Female	1	...	...	...	...	...	...	...	1	...	...	...	...
AE146 Accidental drowning	Male	37	4	3	1	1	4	8	10	4	...	1	1	...
	Female	12	1	...	...	1	...	4	3	1	...	1	1	...
AE147 All other accidental causes	Male	79	2	5	13	3	4	12	4	6	8	4	14	...
	Female	23	4	2	1	1	1	1	3	...	1	3	4	2
AE148 Suicide	Male	126	5	15	13	16	12	10	6	6	7	9	14	13
	Female	31	1	1	1	5	4	...	...	6	3	2	2	6
AE149 Homicide and injury purposely inflicted by other persons (not in war)	Male	12	2	...	...	3	2	...	3	...	1	1	...	...
	Female	10	...	...	...	2	3	3	...	...	...	1	...	1

TABLE 12—DEATHS BY CAUSE, SEX AND MONTH OF DEATH, ALBERTA, 1964—Continued

CAUSE OF DEATH (Intermediate List)	SEX	Total	MONTHS											
			January	February	March	April	May	June	July	August	September	October	November	December
NXVII. ACCIDENTS, POISONINGS AND VIOLENCE (CLASSIFICATION ACCORDING TO NATURE OF INJURY)	Total	1002	78	63	70	74	85	91	74	106	86	104	81	90
	Male	745	49	51	56	53	68	65	54	74	65	76	64	70
	Female	257	29	12	14	21	17	26	20	32	21	28	17	20
AN138 Fracture of skull	Male	154	10	10	7	6	17	13	10	21	16	21	13	10
	Female	43	7	2	3	3	4	5	2	7	1	6	1	2
AN139 Fracture of spine	Male	37	1	3	2	2	4	3	1	8	5	4	2	2
and trunk	Female	15	4	1	2				1	2	2	1	1	1
AN140 Fracture of limbs	Male	34	5	2	5	1	2	7			2	2	5	3
	Female	30	2	2		4	2	2	3	2	6	3	2	2
AN141 Dislocation without fracture	Male													
	Female	1						1						
AN143 Head injury (excluding fracture)	Male	98	6	9	4	7	8	4	9	6	8	14	12	11
	Female	18	1			1	3	3	1	2	2	3	2	
AN144 Internal injury of chest, abdomen, and pelvis	Male	158	6	4	13	16	18	9	8	27	14	13	14	16
	Female	44	3	2	2	2	2	8	5	11	1	3	2	3
AN145 Laceration and open wounds	Male	22	1	2	3	2	2		2		5	1	3	1
	Female	3	1						1	1				
AN146 Superficial injury, contusion and crushing with intact skin surface	Male	1											1	
	Female													
AN147 Effects of foreign body entering through orifice	Male	13		1	2			1	1		1	3	3	1
	Female	13	2	1	1				2		1	2	3	1
AN148 Burns	Male	49	5	4	2	3	3	6	5	1	3	6	3	8
	Female	21		2	3	3	1	1		1	2	4	2	2
AN149 Effects of poisons	Male	67	9	8	8	7	2	3	3	2	3	5	5	12
	Female	36	6	1	2	5	4	1	2	5	2	1	1	6
AN150 All other and unspecified effects of external causes	Male	112	6	8	10	9	12	19	15	9	8	7	3	6
	Female	33	3	1	1	3	1	5	3	1	4	5	3	3

TABLE 13—INFANT DEATHS AND HOSPITAL INFANT DEATHS BY OCCURRENCE AND RESIDENCE FOR CENSUS DIVISIONS, ALBERTA, 1964

CENSUS DIVISIONS	Total Infant Deaths				Infant Deaths in Hospitals			
	Total by Occurrence	Total by Residence	By Occurrence; Residence Elsewhere	By Residence; Occurrence Elsewhere	Total by Occurrence	Total by Residence	By Occurrence; Residence Elsewhere	By Residence; Occurrence Elsewhere
ALBERTA	871	865	13	7	740	734	11	5
Division No. 1	14	15	1	2	11	13	....	2
Division No. 2	51	48	4	1	46	43	4	1
Division No. 3	15	19	....	4	11	15	....	4
Division No. 4	9	10	1	2	7	8	1	2
Division No. 5	18	23	1	6	17	22	1	6
Division No. 6	211	203	14	6	181	172	13	4
Division No. 7	15	17	3	5	12	13	3	4
Division No. 8	51	57	2	8	44	50	2	8
Division No. 9	10	12	2	4	8	11	1	4
Division No. 10	22	26	3	7	19	23	3	7
Division No. 11	301	257	54	10	266	224	50	8
Division No. 12	53	53	5	5	42	40	5	3
Division No. 13	29	29	11	11	24	25	10	11
Division No. 14	8	19	....	11	3	14	....	11
Division No. 15	64	77	....	13	49	61	....	12

DEPARTMENT OF VITAL STATISTICS

TABLE 14—INFANT DEATHS AND HOSPITAL INFANT DEATHS BY OCCURRENCE AND RESIDENCE FOR URBAN PLACES OF 1,000 POPULATION AND OVER, ALBERTA, 1964

CITY, TOWN OR VILLAGE	Total Infant Deaths				Infant Deaths in Hospital			
	Total by Occurrence	Total by Residence	By Occurrence; Residence Elsewhere	By Residence; Occurrence Elsewhere	Total by Occurrence	Total by Residence	By Occurrence; Residence Elsewhere	By Residence; Occurrence Elsewhere
Athabasca	1	1	...	...	1	1	...	...
Barrhead	7	2	5	...	7	2	5	...
Bellevue	...	1	...	1	...	1	...	1
Black Diamond	...	1	...	1	...	1	...	1
Blairmore	...	2	...	2	...	2	...	2
Bonnyville	2	2	...	...	2	2	...	...
Bow Island	1	...	1	...	1	...	1	...
Bowness	2	6	...	4	...	4	...	4
Brooks	9	4	5	...	9	4	5	...
Calgary	195	178	23	6	168	150	22	4
Camrose	8	3	5	...	8	3	5	...
Cardston	4	4	...	...	4	4	...	...
Castor	1	...	1	...	1	...	1	...
Claresholm	2	3	...	1	2	3	...	1
Coaldale	3	1	2	...	3	1	2	...
Cold Lake	5	2	3	...	5	2	3	...
Coleman	...	2	...	2	...	2	...	2
Devon	...	...	...	...	...	...	...	...
Didsbury	...	...	...	...	...	...	...	...
Drayton Valley	9	4	6	1	9	4	6	1
Drumheller	12	6	7	1	12	6	7	1
Edmonton	271	178	98	5	242	150	96	4
Edson	2	1	1	...	2	1	1	...
Fairview	6	3	3	...	6	3	3	...
Fort Macleod	4	3	1	...	1	1	...	...
Fort Saskatchewan	...	2	...	2	...	2	...	2
Grand Centre	...	2	...	2	...	2	...	2
Grande Prairie	9	6	3	...	8	5	3	...
Grimshaw	...	1	...	1	...	1	...	1
Hanna	4	2	2	...	4	2	2	...
High Prairie	14	4	12	2	14	4	12	2
High River	4	1	4	1	4	1	4	1
Hinton	2	2	1	1	1	1	1	1
Innisfail	4	3	1	...	4	3	1	...
Jasper Place	1	22	...	21	...	21	...	21
Lac La Biche	7	4	3	...	7	4	3	...
Lacombe	1	...	1	...	1	...	1	...
Leduc	1	1	1	1	1	1	1	1
Lethbridge	23	19	5	1	23	19	5	1
Lloydminster	...	2	...	2	...	2	...	2
Magrath	...	...	...	...	...	...	...	...
McLennan	4	...	4	...	4	...	4	...
McMurray	9	7	2	...	7	5	2	...
Medicine Hat	11	9	3	1	10	9	2	1
Nanton	...	...	...	...	...	...	...	...
Okotoks	...	...	...	...	...	...	...	...
Olds	7	3	4	...	7	3	4	...
Peace River	9	7	4	2	6	5	3	2
Pincher Creek	3	4	...	1	2	3	...	1
Ponoka	3	2	1	...	3	2	1	...
Provost	2	1	1	...	2	1	1	...
Raymond	3	1	2	...	3	1	2	...
Redcliff	...	...	...	...	...	...	...	...
Red Deer	27	18	10	1	26	17	10	1
Redwater	...	3	...	3	...	3	...	3
Rimbey	2	1	1	...	2	1	1	...
Rocky Mountain House	6	6	2	2	6	6	2	2
St. Albert	...	4	...	4	...	4	...	4
St. Paul	11	8	4	1	11	8	4	1
Stettler	1	1	...	...	1	1	...	...
Stony Plain	1	1	...	...	1	1	...	...
Sylvan Lake	...	...	...	...	...	...	...	...
Taber	5	1	4	...	5	1	4	...
Three Hills	1	...	1	...	1	...	1	...
Valleyview	...	1	...	1	...	1	...	1
Vegreville	1	...	1	...	1	...	1	...
Vermilion	2	1	1	...	2	1	1	...
Viking	4	3	2	1	4	3	2	1
Vulcan	...	...	...	...	...	...	...	...
Wainwright	4	2	3	1	4	1	3	...
Westlock	9	2	7	...	8	2	6	...
Wetaskiwin	13	5	9	1	12	4	9	1
Whitecourt	2	6	...	4	...	4	...	4

TABLE 16—SELECTED CAUSES OF INFANT DEATH BY SEX AND MONTH OF DEATH, ALBERTA, 1964

Int. List No.	CAUSE OF DEATH (7th Rev.)	Total Under 1 Year		MONTH OF DEATH																								
		Total	Male	Female	January		February		March		April		May		June		July		August		September		October		November		December	
					M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
.0	—Without immaturity	5	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.5	—With immaturity	2	2	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
69	Maternal toxæmia	7	4	3	1	2	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.0-4	—Without immaturity	3	1	2	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.5-9	—With immaturity	15	10	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
770	Erythroblastosis	14	10	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.0-2	—Without immaturity	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.5-7	—With immaturity	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
771	Haemorrhagic disease of newborn	5	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.0	—Without immaturity	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.5	—With immaturity	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
772	Nutritional maladjustment	4	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.0	—Without immaturity	4	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.5	—With immaturity	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
773	Ill-defined diseases peculiar to early infancy	109	58	51	8	4	5	5	6	4	4	4	8	4	4	4	4	5	3	2	1	5	7	5	3	2	4	7
.0	—Without immaturity	33	15	18	5	3	2	1	3	1	1	1	1	1	1	1	1	2	3	1	1	1	1	1	1	1	1	1
.5	—With immaturity	76	43	33	3	1	3	5	5	3	3	3	7	2	3	2	2	3	2	3	1	1	4	7	4	2	1	4
774-776	Immaturity	162	91	71	6	5	10	2	9	14	6	6	8	9	9	4	6	8	10	7	7	7	5	2	4	4	11	8
795	Ill-defined and unknown causes	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
E810-E825	Motor vehicle traffic accidents	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
E900-E904	Accidental falls	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
E916	Accidents caused by fire	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
E921, E922	Inhalation and ingestion of food or other object	18	8	10	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
E924, E925	Accidental mechanical suffocation	14	11	3	1	1	3	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Residual	All other accidents	5	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
E800-E962	RESIDUALS																											
Class I	(Infective and parasitic diseases)	4	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Class II	(Neoplasms)	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Class III	(Allergic, etc. diseases)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Class IV	(Blood, etc. diseases)	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Class V	(Diseases of nervous system etc.)	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Class VI	(Diseases of circulatory system)	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Class VII	(Diseases of respiratory system)	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Class VIII	(Diseases of digestive system)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Class IX	(Accidental and violent causes)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Class XVII	All other causes	6	2	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

1. Includes Hodgkin's disease, leukaemia and aleukaemia.

DEPARTMENT OF VITAL STATISTICS

TABLE 17—DEATHS AT ALL AGES ACCORDING TO THE INTERNATIONAL INTERMEDIATE LIST OF 150 CAUSES, CANADA, 1964

(Continued)

CAUSE OF DEATH (Intermediate List) (7th Rev.)	Canada		Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon	Northwest Territories
	1963	1964												
A 32 Measles	73	58	2	..	..	4	1	11	7	6	8	9	8	2
A 33 Yellow fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..
A 34 Infectious hepatitis	107	70	1	..	3	..	4	15	26	4	4	5	8	..
A 35 Rabies	..	1	..	..	..	..	..	1	..	..	..	..	1	..
A 36 Typhus and other rickettsial diseases	..	1	..	..	..	..	1	..	..	..	..	..	..	..
A 37 Malaria	..	1	..	..	..	..	..	..	..	..	..	..	..	..
A 38 Schistosomiasis	..	..	..	..	..	..	..	..	..	..	..	..	..	..
A 39 Hydatid disease	..	1	..	..	..	..	..	1	..	..	..	..	1	..
A 40 Filariasis	..	..	..	..	..	..	..	..	..	..	..	..	..	..
A 41 Ankylostomiasis	..	..	..	..	..	..	..	..	..	..	..	..	..	..
A 42 Other diseases due to helminths	2	2	..	..	..	..	..	..	1	..	..	..	1	..
A 43 All other diseases classified as infective and parasitic	113	103	2	..	1	1	1	33	34	8	2	7	11	4
II. NEOPLASMS	25,432	25,958	533	175	1,185	775	7,093	9,051	1,413	1,231	1,634	2,848	7	13
All malignant neoplasms (A44-A59)	25,077	25,637	528	173	1,167	764	7,005	8,946	1,393	1,213	1,614	2,815	7	12
A 44 Malignant neoplasm of buccal cavity and pharynx	506	536	12	3	24	13	194	172	24	17	25	52	..	..
A 45 Malignant neoplasm of esophagus	421	436	14	..	14	9	112	173	17	14	26	57	..	..
A 46 Malignant neoplasm of stomach	2,806	2,721	131	16	142	106	790	745	154	160	190	286	1	..
A 47 Malignant neoplasm of intestine, except rectum	2,939	3,051	62	17	198	125	864	1,056	158	103	151	316	..	1
A 48 Malignant neoplasm of rectum	1,153	1,143	13	6	47	38	298	435	65	60	63	117	..	1
A 49 Malignant neoplasm of larynx	200	209	1	2	10	7	86	59	3	8	8	25	..	..
A 50 Malignant neoplasm of trachea, and of bronchus and lung not specified as secondary	3,246	3,387	45	12	132	66	833	1,301	210	164	205	417	2	..
A 51 Malignant neoplasm of breast	2,379	2,351	33	14	93	64	688	876	112	82	127	261	..	1
A 52 Malignant neoplasm of cervix uteri	623	627	12	6	32	18	169	237	32	23	32	65	1	..
A 53 Malignant neoplasm of other and unspecified parts of uterus	448	419	9	4	17	13	164	119	24	14	15	40	..	..
A 54 Malignant neoplasm of prostate	1,329	1,383	22	18	62	37	315	485	91	82	109	161	1	..
A 55 Malignant neoplasm of skin	303	303	8	5	7	6	70	107	16	22	30	32	..	..
A 56 Malignant neoplasm of bone and connective tissue	285	285	4	1	16	7	106	94	16	13	19	19	..	..
A 57 Malignant neoplasm of all other and unspecified sites	6,091	6,397	123	52	290	193	1,703	2,279	324	317	431	675	2	8
A Other digestive organs (155-159)	2,277	2,465	39	26	111	84	710	826	93	132	172	267	1	4
B Other respiratory organs (160, 164, 165)	96	105	1	2	11	4	27	42	5	3	4	5	..	1

C	Urinary organs (180, 181)	1,273	1,290	15	10	48	37	318	506	81	58	73	143	1
D	Brain and other parts of nervous system (193)	695	726	13	1	27	18	222	250	42	29	54	70	...
E	Other	1,750	1,811	55	13	50	50	426	655	103	95	128	190	3
A 58	Leukaemia and aleukaemia	1,160	1,184	21	8	46	38	282	389	80	78	94	147	1
A 59	Lymphosarcoma and other neoplasms of lymphatic and haematopoietic system	1,188	1,195	18	9	37	24	331	419	67	56	89	145	...
A	Hodgkin's disease (201)	280	276	5	8	5	83	89	20	18	12	20	34	...
B	Other	908	919	13	7	29	19	248	330	49	44	69	111	...
A 60	Benign neoplasms and neoplasms of unspecified nature	355	321	5	2	18	11	88	105	20	18	20	33	1
III, IV, ALLERGIC DISORDERS AND ENDOCRINE METABOLIC AND BLOOD DISEASES														
A 61	Nontoxic goitre	18	11	...	...	...	...	3	4	1	2	1	...	4
A 62	Thyrototoxicosis with or without goitre	39	28	5	...	2	30	7	9	1	...	...	...	...
A 63	Diabetes mellitus	2,302	2,488	47	12	121	80	841	779	91	134	156	226	1
A 64	Avitaminosis and other deficiency states	100	76	5	1	2	4	20	28	1	2	5	8	...
A 65	Anaemias	352	316	9	2	17	14	96	89	14	17	28	30	...
A 66	Allergic disorders; all other endocrine metabolic and blood diseases	1,003	991	21	3	55	42	316	275	52	63	65	96	3
V. MENTAL, PSYCHONEUROTIC, AND PERSONALITY DISORDERS														
A 67	Psychoses	474	439	2	6	14	10	168	157	10	18	20	32	2
A 68	Psychoneuroses and disorders of personality	190	150	...	...	6	4	42	66	3	10	11	8	...
A 69	Mental deficiency	161	182	1	4	3	2	57	77	5	4	5	22	2
		123	107	1	2	5	4	69	14	2	4	4	2	...
VI. DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS														
A 70	Vascular lesions affecting central nervous system	17,136	16,743	374	97	844	531	3,870	6,380	893	816	996	1,922	5
A 71	Nonmeningococcal meningitis	15,410	15,030	321	88	784	472	3,276	5,874	825	741	899	1,742	5
A 72	Multiple sclerosis	178	179	9	1	4	6	64	43	7	10	7	19	3
A 73	Epilepsy	180	182	1	4	7	3	72	46	9	7	13	20	9
A 74	Inflammatory diseases of eye	241	252	8	...	6	9	95	69	11	14	15	24	1
A 75	Cataract	1	1	1	...	...	...	...	...	1	...	...	...	...
A 76	Glaucoma	3	2	...	...	...	...	...	...	...	...	...	...	...
A 77	Otitis media and mastoiditis	82	87	...	...	1	3	50	17	...	2	...	13	1
A 78	All other diseases of the nervous system and sense organs	1,040	1,008	34	4	42	37	312	331	40	42	62	103	1
VII. DISEASES OF THE CIRCULATORY SYSTEM														
		57,088	57,798	885	410	2,548	1,918	13,871	22,240	3,057	2,871	3,308	6,656	12
A 79	Rheumatic fever	39	42	2	1	1	2	13	14	4	...	3	2	...
A 80	Chronic rheumatic heart disease	1,403	1,323	31	8	35	39	355	477	73	53	101	148	1
A 81	Arteriosclerotic and degenerative heart disease	45,627	46,378	597	309	1,992	1,536	10,725	18,554	2,417	2,125	2,635	5,461	8
A 82	Other diseases of heart	2,184	2,219	87	12	128	75	534	665	127	194	171	225	1
A 83	Hypertension with heart disease	2,858	2,656	79	40	123	106	917	822	103	124	88	253	1
A 84	Hypertension without mention of heart	770	806	20	10	36	28	293	218	34	42	56	69	...
A 85	Diseases of arteries	3,516	3,625	60	25	210	113	903	1,213	211	278	210	400	2
A 86	Other diseases of circulatory system	691	749	9	5	23	19	131	277	88	55	44	98	...

TABLE 17—DEATHS AT ALL AGES ACCORDING TO THE INTERNATIONAL INTERMEDIATE LIST OF 150 CAUSES, CANADA, 1964

(Continued)

CAUSE OF DEATH (Intermediate List) (7th Rev.)	Canada		Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon	Northwest Territories
	1963	1964												
VIII. DISEASES OF THE RESPIRATORY SYSTEM														
A 87 Acute upper respiratory infections	9,823	8,053	246	57	325	238	1,512	2,750	569	552	593	1,152	14	45
A 88 Influenza	99	78	1	...	...	2	26	29	3	4	...	8	1	4
A 89 Lobar pneumonia	1,183	300	19	1	6	9	79	60	6	27	12	76	...	5
A 90 Bronchopneumonia	569	516	11	1	25	12	70	214	48	38	27	67	1	2
A 91 Primary atypical, other and unspecified pneumonia	3,702	3,052	97	14	101	102	494	1,108	251	237	261	420	4	3
A 92 Acute bronchitis	1,511	1,354	66	20	61	48	173	466	79	82	115	215	6	23
A 93 Acute bronchitis, chronic and unqualified	1,511	1,354	66	20	61	48	173	466	79	82	115	215	6	23
A 94 Hypertrophy of tonsils and adenoids	90	94	3	2	2	2	2	10	38	10	6	5	2	...
A 95 Empyema and abscess of lung	976	923	19	6	62	19	211	305	49	60	69	123	...	1
A 96 Pleurisy	11	8	1	...	1	...	5	25	4	1	10	13	...	...
A 97 All other respiratory diseases	67	75	1	...	1	3	15	20	9	2	2	2	...	7
	36	42	...	...	...	36	412	495	116	93	92	212	...	...
	1,579	1,571	29	13	66	...	...	...	...	...	...	...	...	...
IX. DISEASES OF THE DIGESTIVE SYSTEM														
A 98 Diseases of teeth and supporting structures	5,489	5,511	87	22	198	166	1,471	1,948	301	305	385	607	9	12
A 99 Ulcer of stomach	9	14	...	...	1	1	6	3	...	...	...	3	...	...
A 100 Ulcer of duodenum	490	508	9	3	17	19	135	175	25	27	30	68	...	...
A 101 Gastritis and duodenitis	462	484	10	1	18	13	80	192	33	37	33	66	1	...
A 102 Appendicitis	36	41	2	1	1	2	8	10	3	3	6	4	...	1
A 103 Intestinal obstruction and hernia	139	162	4	...	2	6	32	62	7	14	20	13	...	2
A 104 Gastro-enteritis and colitis, except diarrhoea of the newborn	975	917	17	7	35	36	226	329	54	47	68	96	...	7
A 105 Cirrhosis of liver	880	709	18	...	23	24	194	217	53	45	44	80	4	...
A 106 Cholelithiasis and cholecystitis	1,093	1,228	12	3	32	26	378	469	51	48	71	135	3	...
A 107 Other diseases of digestive system	581	535	3	1	20	15	156	196	27	35	41	40	1	...
	824	913	12	6	49	24	256	295	48	49	72	102	...	...
X. DISEASES OF THE GENITO-URINARY SYSTEM														
A 108 Acute nephritis	3,029	2,833	58	19	108	117	934	883	150	161	142	259	1	1
A 109 Chronic, other and unspecified nephritis	58	59	...	2	2	3	24	16	4	1	3	4	...	...
A 110 Infections of kidney	1,311	1,220	21	10	44	52	517	350	39	52	49	85	1	...
A 111 Calculi of urinary system	702	649	18	3	26	24	159	195	50	56	41	76	...	1
	103	102	2	...	2	5	20	44	1	5	4	8	...	...

A112 Hyperplasia of prostate	447	7	3	25	21	90	165	28	30	29	49	...
A113 Diseases of breast	356	10	1	9	12	124	113	17	17	16	37	...
A114 Other diseases of genito-urinary system .....												...
XI. DELIVERIES AND COMPLICATIONS OF PREGNANCY, CHILD BIRTH AND THE PUERPERIUM	165	137	6	9	10	50	43	4	5	8	2	...
A115 Sepsis of pregnancy, childbirth and the puerperium	19	20	1	2	2	8	6	1	...	...	...	...
A116 Toxaemias of pregnancy and the puerperium	28	20	3	2	2	5	7	1	2	...	...	...
A117 Haemorrhage of pregnancy and childbirth	31	25	...	1	1	12	8	...	1	1	1	...
A118 Abortion without mention of sepsis or toxæmia	4	8	...	...	...	5	3	...	...	...	...	...
A119 Abortion with sepsis	21	12	...	1	1	1	6	...	...	3	...	...
A120 Other complications of pregnancy, childbirth and the puerperium	62	52	2	5	4	19	13	2	2	4	1	...
XII. XIII. DISEASES OF THE SKIN AND MUSCULOSKELETAL SYSTEM	602	597	6	25	13	194	209	30	23	41	51	...
A121 Infections of skin and subcutaneous tissue	52	46	...	1	...	12	20	4	1	4	4	...
A122 Arthritis and spondylitis	262	245	3	15	7	79	89	10	8	16	18	...
A123 Muscular rheumatism and rheumatism unspecified	9	10	...	1	1	5	2	...	1	...	...	...
A124 Osteomyelitis and periostitis	14	14	...	...	...	5	5	4	...	...	...	...
A125 Ankylosis and acquired musculoskeletal deformities	11	16	...	1	...	8	1	1	2	...	3	...
A126 All other diseases of skin and musculoskeletal system	254	266	3	7	5	85	92	11	12	20	26	...
XIV. CONGENITAL MALFORMATIONS	2,699	2,589	81	16	118	79	905	119	84	173	170	5
A127 Spina bifida and meningocele	407	370	15	3	15	17	131	16	5	15	16	1
A Without hydrocephalus	183	158	6	1	7	4	83	7	...	7	7	...
B With hydrocephalus	224	212	9	2	8	13	68	9	5	8	9	1
A128 Congenital malformations of circulatory system	1,197	1,152	36	5	49	28	381	59	47	78	80	3
A129 All other congenital malformations	1,095	1,067	30	8	54	34	373	44	32	80	74	1
XV. CERTAIN DISEASES OF EARLY INFANCY	7,040	6,539	236	38	244	226	2,103	308	357	542	454	31
A130 Birth injuries	1,232	1,170	32	6	34	33	409	75	47	71	81	1
A131 Postnatal asphyxia and atelectasis	1,368	1,256	32	12	41	28	372	47	78	133	105	1
A132 Infections of the newborn	477	405	32	...	18	16	114	27	28	36	25	7
A133 Haemolytic disease of newborn	292	252	8	1	12	7	105	4	10	15	12	1
A134 All other defined diseases of early infancy	205	220	13	...	8	9	78	15	7	16	15	...
A135 Ill-defined diseases peculiar to early infancy and immaturity unqualified	3,466	3,236	119	19	131	133	1,025	971	140	187	216	5
XVI. SYMPTOMS, SENILITY AND ILL-DEFINED CONDITIONS	1,229	1,101	156	14	29	46	205	186	52	311	61	1
A136 Senility without mention of psychosis	516	432	86	2	20	31	70	13	27	90	25	2
A137 Ill-defined and unknown causes	713	669	70	12	9	15	135	14	25	221	36	1
EXVII. ACCIDENTS, POISONINGS AND VIOLENCE (CLASSIFICATION ACCORDING TO EXTERNAL CAUSE)	11,938	12,396	258	98	488	431	3,440	611	624	1,002	1,355	17
A138 Motor vehicle accidents	4,451	4,862	89	35	199	196	1,673	204	228	371	400	2

TABLE 17—DEATHS AT ALL AGES ACCORDING TO THE INTERNATIONAL INTERMEDIATE LIST OF 150 CAUSES, CANADA, 1964
(Continued)

CAUSE OF DEATH (Intermediate List) (7th Rev.)	Canada		Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon	Northwest Territories
	1963	1964												
A Traffic accidents (810-825)	4,367	4,750	87	34	194	194	1,650	1,420	197	220	360	385	7	2
B Non-traffic accidents	84	112	2	1	5	2	23	38	7	8	11	15	.....	.....
AE139 Other transport accidents	655	568	32	7	30	30	109	203	33	19	29	82	.....	5
A Drowning involving small boats (850)	271	282	21	4	16	8	62	105	15	11	6	32	.....	2
B Drowning involving other water craft (851)	20	33	3	.....	4	1	3	4	.....	.....	.....	18	.....	3
C Other transport	364	253	8	3	10	10	44	94	18	8	23	32	.....	6
AE140 Accidental poisoning	384	421	2	.....	8	10	81	125	24	14	48	97	.....	3
AE141 Accidental falls	1,564	1,583	22	10	69	53	351	622	90	92	105	169	.....	6
AE142 Accident caused by machinery	236	234	1	.....	7	13	61	62	13	21	29	26	.....	.....
AE143 Accident caused by fire and explosion of combustible material	584	657	25	5	38	18	157	203	41	38	72	52	.....	6
AE144 Accident caused by hot substance, corrosive liquid, steam and radiation	42	46	2	.....	3	1	13	20	2	2	1	2	.....	.....
AE145 Accident caused by firearm	150	180	3	1	8	9	61	43	5	15	17	17	.....	1
AE146 Accidental drowning	839	757	22	9	34	26	292	212	21	17	49	69	.....	6
AE147 All other accidental causes	1,350	1,256	39	13	40	43	263	421	67	76	102	175	.....	15
All accidental causes	10,255	10,564	237	86	436	388	3,061	3,369	500	522	823	1,069	.....	41
AE148 Suicide	1,436	1,586	17	12	40	39	324	572	94	85	157	237	.....	5
AE149 Homicide and injury purposely inflicted by other persons	244	241	4	.....	12	4	55	78	16	17	22	29	.....	3
AE150 Injury resulting from operations of war	3	5	.....	.....	.....	.....	.....	4	1	.....	.....	.....	.....	.....
NXVII. ACCIDENTS, POISONINGS AND VIOLENCE (CLASSIFICATION ACCORDING TO NATURE OF INJURY)	11,938	12,396	258	98	488	431	3,440	4,023	611	624	1,002	1,355	.....	49
AN138 Fracture of skull	2,730	2,842	44	13	112	80	1,112	825	113	101	197	240	.....	5
AN139 Fracture of spine and trunk	669	710	10	7	29	27	195	234	31	44	52	79	.....	2
AN140 Fracture of limbs	1,055	1,049	21	7	46	47	235	409	67	59	64	94	.....	.....
AN141 Dislocation without fracture	8	8	.....	.....	.....	.....	.....	6	.....	1	.....	.....	.....	.....
AN142 Sprains and strains of joints and adjacent muscles	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
AN143 Head injury (excluding fracture)	1,129	1,200	21	7	41	51	310	370	56	79	116	145	.....	3
AN144 Internal injury of chest, abdomen and pelvis	1,914	2,037	28	13	75	95	490	646	99	139	202	243	.....	3
AN145 Laceration and open wounds	191	197	5	2	6	10	44	65	5	7	25	25	.....	4
AN146 Superficial injury, contusion and crushing with intact skin surface	20	15	.....	.....	1	.....	6	4	1	.....	1	2	.....	3
AN147 Effects of foreign body entering through orifice	462	426	18	4	11	12	75	181	32	26	26	38	.....	.....
AN148 Burns	493	612	29	5	42	19	144	197	29	34	70	40	.....	1
AN149 Effects of poisons	984	1,039	7	11	24	18	218	353	65	44	103	181	.....	14
AN150 All other and unspecified effects of external causes	2,281	2,261	75	29	101	72	611	733	113	90	145	288	.....	21

TABLE 18—DEATH RATES PER 100,000 POPULATION AT ALL AGES ACCORDING TO THE INTERNATIONAL INTERMEDIATE LIST OF 150 CAUSES, CANADA, 1964

CAUSE OF DEATH (Intermediate List) (7th Rev.)		Canada		Newfoundland		Prince Edward Island	Nova Scotia		New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon	Northwest Territories
		1963	1964														
ALL CAUSES		779.9	758.3	623.8	916.8	840.0	767.6	675.2	792.7	805.9	781.9	662.2	923.5	543.8	864.0		
I. INFECTIVE AND PARASITIC DISEASES		7.5	6.5	9.8	5.6	6.8	5.3	8.1	4.9	7.2	5.9	5.0	7.0		64.0		
A 1 Tuberculosis of respiratory system		3.6	3.1	4.5	1.9	3.7	2.3	4.8	2.0	2.8	2.0	1.8	2.9		20.0		
A Active		3.1	2.6	4.1	1.9	2.9	2.1	4.4	1.6	1.9	1.4	1.6	2.4		16.0		
B Inactive (002.2, 008.2)		0.4	0.5	0.4	...	0.8	0.2	0.4	0.5	0.9	0.6	0.2	0.5		4.0		
A 2 Tuberculosis of meninges and central nervous system		0.1	0.1	0.4	...	...	...	0.2	*	*	0.1	0.1	0.1		...		
A 3 Tuberculosis of intestines, peritoneum and mesenteric glands		*	*	...	...	...	0.2	0.1	...	0.1	0.2	0.3	0.2		...		
A 4 Tuberculosis of bones and joints		0.2	0.2	0.4	...	0.1	0.2	0.3	0.1	0.6	...	...	...		...
A 5 Tuberculosis, all other forms		*	*	...	...	...	...	...	...	...	...	...	...		...
A 6 Congenital syphilis		...	...	...	...	...	0.2	...	...	...	...	...	...		...
A 7 Early syphilis		...	...	...	...	...	0.3	*	0.1	...	...	...	...		...
A 8 Tabes dorsalis		*	*	...	...	...	0.2	*	0.1	...	...	...	...		...
A 9 General paralysis of insane		0.1	0.1	...	...	...	0.2	*	0.1	...	0.1	0.2	...		...
A 10 All other syphilis		0.4	0.4	0.6	1.9	0.9	0.5	0.2	0.3	0.2	0.5	0.2	0.6		...		
A 11 Gonococcal infection		...	*	...	...	...	0.2	*	...	...	...	...	...		...
A 12 Typhoid fever		*	*	...	...	...	...	...	...	...	...	...	...		...
A 13 Paratyphoid fever and other Salmonella infections		*	0.1	...	...	0.1	...	0.1	0.1	...	...	...	0.1		...		
A 14 Cholera		...	...	...	...	...	...	...	...	...	...	...	...		...
A 15 Brucellosis (undulant fever)		*	0.1	0.2	...	...	...	*	*	0.2	0.3	...	...		16.0		
A 16 Dysentery, all forms		*	*	...	...	...	...	...	...	...	...	...	...		...
A 17 Scarlet fever		*	*	...	...	...	...	...	...	...	...	...	...		...
A 18 Streptococcal sore throat		*	*	...	...	...	...	...	...	...	...	...	...		...
A 19 Erysipelas		*	*	...	...	...	...	...	...	...	...	...	...		...
A 20 Septicemia and pyaemia		0.3	0.3	0.4	0.9	0.4	...	0.1	0.3	0.1	0.8	0.3	0.5		4.0		
A 21 Diphtheria		*	*	0.2	...	...	...	*	*	0.2	...	...	...		...
A 22 Whooping cough		0.1	0.1	...	...	...	...	0.3	*	0.2	...	0.1	0.1		...		
A 23 Meningococcal infections		0.2	0.2	1.0	...	...	0.2	0.2	0.2	0.2	0.1	0.2	0.2		...		
A 24 Plague		...	...	...	...	...	...	...	...	...	...	...	...		...
A 25 Leprosy		...	...	...	...	...	...	...	...	...	...	...	...		...
A 26 Tetanus		*	*	0.2	0.9	0.1	0.2	*	*	0.2	...	...	...		...
A 27 Anthrax		...	...	...	...	...	...	...	...	...	...	...	...		...
A 28 Acute poliomyelitis		0.1	*	...	...	...	...	0.1	*	...	...	...	...		...
A 29 Acute infectious encephalitis		0.2	0.2	0.4	...	0.1	...	0.3	0.1	0.3	0.1	0.2	0.3		...		
A 30 Late effects of acute poliomyelitis and acute infectious encephalitis		0.1	0.1	0.2	...	...	...	0.1	0.2	0.1	0.2	0.1	0.2		...		

TABLE 18—DEATH RATES PER 100,000 POPULATION AT ALL AGES ACCORDING TO THE INTERNATIONAL INTERMEDIATE LIST OF 150 CAUSES, CANADA, 1964 (Continued)

CAUSE OF DEATH (Intermediate List) (7th Rev.)	Canada		Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon	Northwest Territories
	1963	1964												
CAUSE OF DEATH (Intermediate List) (7th Rev.)														
A 31 Smallpox	0.4	0.3	0.4	.....	0.5	0.2	0.2	0.1	0.6	0.8	0.6	0.5	.....	8.0
A 32 Measles .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
A 33 Yellow fever	0.6	0.4	0.2	.....	0.4	0.6	0.3	0.4	0.4	0.4	0.3	0.5	.....	.....
A 34 Infectious hepatitis .....	.....	*	.....	.....	.....	.....	*	.....	.....	.....	.....	.....	.....	.....
A 35 Rabies .....	.....	*	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.1	.....	.....
A 36 Typhus and other rickettsial diseases .....	.....	*	.....	.....	.....	0.2	.....	.....	.....	.....	.....	.....	.....	.....
A 37 Malaria .....	.....	*	.....	.....	.....	.....	*	.....	.....	.....	.....	0.1	.....	.....
A 38 Schistosomiasis .....	.....	*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
A 39 Hydatid disease .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
A 40 Filariasis .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
A 41 Ankylostomiasis .....	.....	*	.....	.....	.....	.....	.....	*	.....	.....	.....	0.1	.....	.....
A 42 Other diseases due to helminths	0.6	0.5	0.4	.....	0.1	0.2	0.6	0.5	0.8	0.2	0.5	0.6	.....	16.0
A 43 All other diseases classified as infective and parasitic	134.6	135.0	108.6	163.6	155.9	125.6	127.5	137.4	147.5	130.5	114.1	163.9	43.8	52.0
II. NEOPLASMS	132.7	133.3	107.5	161.7	153.6	123.8	125.9	135.8	145.4	128.6	112.7	162.0	43.8	48.0
All malignant neoplasms (A44-A59)														
A 44 Malignant neoplasm of buccal cavity and pharynx	2.7	2.8	2.4	2.8	3.2	2.1	3.5	2.6	2.5	1.8	1.7	3.0	.....	.....
A 45 Malignant neoplasm of oesophagus	2.2	2.3	2.9	.....	1.8	1.5	2.0	2.6	1.8	1.5	1.8	3.3	.....	.....
A 46 Malignant neoplasm of stomach	14.8	14.1	26.7	15.0	18.7	17.2	14.2	11.3	16.1	17.0	13.3	16.5	6.3	.....
A 47 Malignant neoplasm of intestine, except rectum	15.6	15.9	12.6	15.9	26.1	20.3	15.5	16.0	16.5	10.9	10.5	18.2	.....	4.0
A 48 Malignant neoplasm of rectum	6.1	5.9	2.6	5.6	6.2	6.2	5.4	6.6	6.8	4.4	6.7	.....	.....	4.0
A 49 Malignant neoplasm of larynx	1.1	1.1	0.2	1.9	1.3	1.1	1.5	0.9	0.3	0.8	0.6	1.4	.....	.....
A 50 Malignant neoplasm of trachea, and of bronchus and lung not specified as secondary	17.2	17.6	9.2	11.2	17.4	10.7	15.0	19.8	21.9	17.4	14.3	24.0	12.5	.....
A 51 Malignant neoplasm of breast	12.6	12.2	6.7	13.1	12.2	10.4	12.4	13.3	11.7	8.7	8.9	15.0	4.0	.....
A 52 Malignant neoplasm of cervix uteri	6.7	6.6	5.0	11.5	8.6	5.9	6.1	7.2	6.8	5.0	4.6	7.6	13.9	.....
A 53 Malignant neoplasm of other and unspecified parts of uterus ¹	4.8	4.4	3.8	7.6	4.5	4.3	5.9	3.6	5.1	3.1	2.2	4.7	.....	.....
A 54 Malignant neoplasm of prostate ²	13.9	14.3	8.7	32.9	16.1	11.9	11.3	14.7	18.8	16.9	14.8	18.3	11.4	.....
A 55 Malignant neoplasm of skin	1.6	1.6	1.6	4.7	0.9	1.0	1.3	1.6	1.7	2.3	2.1	1.8	.....	.....
A 56 Malignant neoplasm of bone and connective tissue	1.5	1.5	0.8	0.9	2.1	1.1	1.9	1.4	1.7	1.4	1.3	1.1	.....	.....
A 57 Malignant neoplasm of all other and unspecified sites	32.2	33.3	25.1	48.6	38.2	31.3	30.6	34.6	33.8	33.6	30.1	38.8	12.5	32.0
A Other digestive organs (155-159)	12.1	12.8	7.9	24.3	14.6	13.6	12.8	12.5	9.7	14.0	12.0	15.4	6.3	16.0
B Other respiratory organs (160, 164, 165)	0.5	0.5	0.2	1.9	1.4	0.6	0.5	0.6	0.5	0.3	0.3	0.3	.....	4.0

C Urinary organs (180, 181)	6.7	6.7	3.1	9.3	6.3	6.0	5.7	7.7	8.5	6.2	5.1	8.2	6.3	...
D Brain and other parts of nervous system (193)	3.7	3.8	2.6	0.9	3.6	2.9	4.0	3.8	4.4	3.1	3.8	4.0	...	...
E Other	9.3	9.4	11.2	12.1	12.2	8.1	7.7	9.9	10.8	10.1	8.9	10.9	...	12.0
A 58 Leukaemia and aleukaemia	6.1	6.2	4.3	7.5	6.1	6.2	5.1	5.9	8.4	8.3	6.6	8.5	...	4.0
A 59 Lymphosarcoma and other neoplasms of lymphatic and haematopoietic system	6.3	6.2	3.7	8.4	4.9	3.9	6.0	6.4	7.0	5.9	6.2	8.3	...	...
A 60 Hodgkin's disease (201)	1.5	1.4	1.0	1.9	1.1	0.8	1.5	1.4	1.9	1.3	1.4	2.0	...	...
B Other	4.8	4.8	2.6	6.3	3.8	3.1	4.5	5.0	5.1	4.7	4.8	6.4	...	...
A 60 Benign neoplasms and neoplasms of unspecified nature	1.9	1.7	1.0	1.9	2.4	1.8	1.6	1.6	2.1	1.9	1.4	1.9	...	4.0
III, IV, ALLERGIC DISORDERS AND ENDOCRINE, METABOLIC AND BLOOD DISEASES	20.2	20.3	17.7	16.8	25.9	23.2	23.1	18.0	16.7	23.1	17.8	20.8	...	16.0
A 61 Nontoxic goitre	0.1	0.1	...	...	...	...	0.1	0.1	0.1	0.2	0.1	...	...	...
A 62 Thyrotoxicosis with or without goitre	0.2	0.1	1.0	...	0.3	0.5	0.1	0.1	0.1	...	...	0.1	...	...
A 63 Diabetes mellitus	12.2	12.9	9.6	11.2	15.9	13.0	15.1	11.8	9.5	14.2	10.9	13.0	...	4.0
A 64 Avitaminosis and other deficiency states	0.5	0.4	1.0	0.9	0.3	0.6	0.4	0.4	0.1	0.2	0.3	0.5	...	...
A 65 Anaemias	1.9	1.6	1.8	1.9	2.2	2.3	1.7	1.4	1.5	1.8	2.0	1.7	...	...
A 66 Allergic disorders; all other endocrine, metabolic and blood diseases	5.3	5.2	4.3	2.8	7.2	6.8	5.7	4.2	5.4	6.7	4.5	5.5	...	12.0
V. MENTAL, PSYCHONEUROTIC, AND PERSONALITY DISORDERS	2.5	2.3	0.4	5.6	1.8	1.6	3.0	2.4	1.0	1.9	1.4	1.8	12.5	...
A 67 Psychoses	1.0	0.8	...	...	0.8	0.6	0.8	1.0	0.3	1.1	0.8	0.5	...	...
A 68 Psychoneuroses and disorders of personality	0.9	0.9	0.2	3.7	0.4	0.3	1.0	1.2	0.5	0.4	0.3	1.3	12.5	...
A 69 Mental deficiency	0.7	0.6	0.2	1.9	0.7	0.6	1.2	0.2	0.2	0.4	0.3	0.1	...	...
VI. DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS	90.7	87.0	76.2	90.7	111.1	86.1	69.6	96.9	93.2	86.5	69.6	110.6	31.3	60.0
A 70 Vascular lesions affecting central nervous system	81.6	78.1	65.4	82.2	103.2	76.5	58.9	89.2	86.1	78.6	62.8	100.2	31.3	12.0
A 71 Nonmeningococcal meningitis	0.9	0.9	1.8	0.9	0.5	1.0	1.2	0.7	0.7	1.1	0.5	1.1	...	36.0
A 72 Multiple sclerosis	1.0	0.9	0.2	3.7	0.9	0.5	1.3	0.7	0.9	0.7	0.9	1.2	...	...
A 73 Epilepsy	1.3	1.3	1.6	1.6	0.8	1.5	1.7	1.0	1.1	1.5	1.0	1.4	...	4.0
A 74 Inflammatory diseases of eye	*	*	0.2	...	...	...	...	...	0.1	...	...	0.1	...	...
A 75 Cataract	*	*	...	...	...	0.2	*	...	...	...	...	...	...	...
A 76 Glaucoma	*	*	...	...	...	0.1	0.9	0.3	...	0.2	...	0.7	...	4.0
A 77 Otitis media and mastoiditis	0.4	0.5	...	...	0.1	0.5	6.0	5.0	4.2	4.5	4.3	5.9	...	4.0
A 78 All other diseases of the nervous system and sense organs	5.5	5.2	6.9	3.7	5.5	6.0	5.6	5.0	...	...	...	...	...	...
VII. DISEASES OF THE CIRCULATORY SYSTEM	302.1	300.5	180.2	383.2	335.3	310.9	249.4	337.7	319.1	304.5	231.0	383.0	137.5	48.0
A 79 Rheumatic fever	0.2	0.2	0.4	0.9	0.1	0.3	0.2	0.2	0.4	...	0.2	0.1	...	...
A 80 Chronic rheumatic heart disease	7.4	6.9	6.3	7.5	4.6	6.3	6.4	7.2	7.6	5.6	7.1	8.5	6.3	8.0
A 81 Arteriosclerotic and degenerative heart disease	241.5	241.1	121.6	288.8	262.1	248.9	192.8	281.7	252.3	225.3	184.0	314.2	118.8	32.0
A 82 Other diseases of heart	11.6	11.5	17.7	11.2	16.8	12.2	9.6	10.1	13.3	20.6	11.9	12.9	...	4.0
A 83 Hypertension with heart disease	15.1	13.8	16.1	37.4	16.2	17.2	16.5	12.5	10.8	13.1	6.1	14.6	...	4.0
A 84 Hypertension without mention of heart	4.1	4.2	4.1	9.3	4.7	4.5	5.3	3.3	3.5	4.5	3.9	4.0	...	...
A 85 Diseases of arteries	18.6	18.8	12.2	23.4	27.6	18.3	16.2	18.4	22.0	29.5	14.7	23.0	12.5	...
A 86 Other diseases of circulatory system	3.7	3.9	1.8	4.7	3.0	3.1	2.4	4.2	9.2	5.8	3.1	5.6	...	...

DEPARTMENT OF VITAL STATISTICS

TABLE 18—DEATH RATES PER 100,000 POPULATION AT ALL AGES ACCORDING TO THE INTERNATIONAL INTERMEDIATE LIST OF 150 CAUSES, CANADA, 1964 (Continued)

CAUSE OF DEATH (Intermediate List) (7th Rev.)	Canada		Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon	Northwest Territories
	1963	1964												
VIII. DISEASES OF THE RESPIRATORY SYSTEM														
A 87 Acute upper respiratory infections	52.0	41.9	50.1	53.3	42.8	38.6	27.2	41.8	59.4	58.5	41.4	66.3	87.5	180.0
A 88 Influenza	0.5	0.4	0.2	...	...	0.3	0.5	0.4	0.3	0.4	...	0.5	6.3	16.0
A 89 Lobar pneumonia	6.3	1.6	3.9	0.9	0.8	1.5	1.4	0.9	0.6	2.9	...	4.4	...	20.0
A 90 Bronchopneumonia	3.0	2.7	2.2	0.9	3.3	1.9	1.3	3.2	5.0	4.0	1.9	3.9	6.3	8.0
A 91 Primary atypical, other and unspecified pneumonia	19.6	16.1	19.8	13.1	13.3	16.5	8.9	16.8	26.2	25.1	18.2	24.2	...	12.0
A 92 Acute bronchitis	8.0	7.0	13.4	18.7	8.0	7.8	3.1	7.1	8.2	8.7	8.0	12.4	37.5	92.0
A 93 Bronchitis, chronic and unqualified	0.5	0.5	0.6	1.9	0.3	0.3	0.2	0.6	1.0	0.6	0.3	0.8	12.5	...
A 94 Hypertrophy of tonsils and adenoids	5.2	4.8	3.9	5.6	8.2	3.1	3.8	4.6	5.1	6.4	4.8	7.1	...	...
A 95 Empyema and abscess of lung	0.1	*	...	...	0.1	...	*	...	0.1	...	...	0.1	...	4.0
A 96 Pleurisy	0.4	0.4	0.2	...	0.1	0.8	0.3	0.4	0.4	0.1	0.7	0.7	...	...
A 97 All other respiratory diseases	0.2	0.2	...	...	...	0.5	0.4	0.1	0.2	0.4	0.1	0.1	...	...
	8.4	8.2	5.9	12.1	8.7	5.8	7.4	7.5	12.1	9.9	6.4	12.2	...	28.0
IX. DISEASES OF THE DIGESTIVE SYSTEM														
A 98 Diseases of teeth and supporting structures	29.0	28.7	17.7	20.6	26.1	26.9	26.4	29.6	31.4	32.3	26.9	34.9	56.3	48.0
A 99 Ulcer of stomach	*	0.1	...	...	0.1	0.2	0.1	*	...	...	...	0.2	...	...
A100 Ulcer of duodenum	2.6	2.6	1.8	2.8	2.2	3.1	3.1	2.4	2.7	2.6	2.1	3.9	...	...
A101 Gastritis and duodenitis	2.4	2.5	2.0	0.9	2.4	2.1	1.4	2.9	3.4	3.9	3.9	3.8	6.3	...
A102 Appendicitis	0.2	0.2	0.4	0.9	0.1	0.3	0.1	0.2	0.3	0.3	0.4	0.2	...	4.0
A103 Intestinal obstruction and hernia	0.7	0.8	0.8	...	0.3	1.0	0.6	0.9	0.7	1.5	1.4	0.7	...	8.0
A104 Gastro-enteritis and colitis, except diarrhoea of the newborn	5.2	4.8	3.5	6.5	4.6	5.8	4.1	5.0	5.6	5.0	4.7	5.5	...	8.0
A105 Cirrhosis of liver	4.7	3.7	3.7	...	4.6	3.9	3.5	3.3	5.3	4.8	3.1	4.6	25.0	28.0
A106 Cholelithiasis and cholecystitis	5.8	6.4	2.4	2.8	4.2	4.2	6.8	7.1	5.3	5.1	5.0	7.8	18.8	...
A107 Other diseases of digestive system	3.1	2.8	0.6	0.9	2.6	2.4	2.8	3.0	2.8	3.7	2.9	2.3	6.3	...
	4.4	4.7	2.4	5.6	6.4	3.9	4.6	4.5	5.0	5.2	5.0	5.9	...	...
X. DISEASES OF THE GENITO-URINARY SYSTEM														
A108 Acute nephritis	16.0	14.7	11.8	17.8	14.2	19.0	16.8	13.4	15.7	17.1	9.9	14.9	6.3	4.0
A109 Chronic, other and unspecified nephritis	0.3	0.3	...	1.9	0.3	0.5	0.4	0.2	0.4	0.1	0.2	0.2	...	...
	6.9	6.3	4.3	9.3	5.8	8.4	9.3	5.3	4.1	5.5	3.4	4.9	6.3	...

A110 Infections of kidney	3.7	3.4	3.7	2.8	3.4	3.9	2.9	3.0	5.2	5.9	2.9	4.4	4.0
A111 Calculi of urinary system	0.5	0.5	0.4	...	0.3	0.8	0.4	0.7	1.3	0.5	0.3	0.5	...
A112 Hyperplasia of prostate ²	5.4	4.6	2.8	5.5	6.5	6.7	3.2	5.0	5.8	6.2	3.9	5.6	...
A113 Diseases of breast	...	...	...	...	...	...	...	...	...	...	...	...	...
A114 Other diseases of genito-urinary system	1.8	1.9	2.0	0.9	1.2	1.9	2.2	1.7	1.8	1.8	1.1	2.1	...
XL DELIVERIES AND COMPLICATIONS OF PREGNANCY, CHILD BIRTH AND THE PUERPERIUM³	35.4	30.2	40.9	...	49.1	65.2	38.2	28.2	18.4	22.0	22.1	5.6	...
A115 Sepsis of pregnancy, childbirth and the puerperium ³	4.1	4.4	6.8	...	10.9	13.0	6.1	3.9	4.6	...	...	...	...
A116 Toxaemias of pregnancy and the puerperium ³	6.0	4.4	20.4	...	...	13.0	3.8	4.6	4.6	8.8	...	...	...
A117 Haemorrhage of pregnancy and childbirth ³	6.7	5.5	...	...	5.5	6.5	9.2	5.2	...	4.4	2.8	...	...
A118 Abortion without mention of sepsis or toxæmia ³	0.9	1.8	...	...	...	...	3.8	2.0	...	...	...	...	...
A119 Abortion with sepsis ³	4.5	2.6	...	...	5.5	6.5	0.8	3.9	...	...	8.3	...	...
A120 Other complications of pregnancy, childbirth and the puerperium ³	13.3	11.5	13.6	...	27.3	26.1	14.5	8.5	9.2	8.8	11.1	2.8	...
XII, XIII. DISEASES OF THE SKIN AND MUSCULOSKELETAL SYSTEM	3.2	3.1	1.2	4.7	3.3	2.1	3.5	3.2	3.1	2.4	2.9	2.9	...
A121 Infections of skin and subcutaneous tissue	0.3	0.2	...	...	0.1	...	0.2	0.3	0.4	0.1	0.3	0.2	...
A122 Arthritis and spondylitis	1.4	1.3	0.6	...	2.0	1.1	1.4	1.4	1.0	0.8	1.1	1.0	...
A123 Muscular rheumatism and rheumatism unspecified	*	0.1	...	...	0.1	0.2	0.1	*	...	...	0.1	...	...
A124 Osteomyelitis and periostitis	0.1	0.1	...	...	...	...	0.1	*	0.1	0.2	...	0.2	...
A125 Ankylosis and acquired musculoskeletal deformities	0.1	0.1	...	...	0.1	0.8	1.5	1.4	1.1	1.3	1.4	1.5	...
A126 All other diseases of skin and musculoskeletal system	1.3	1.4	0.6	4.7	0.9	...	...	...	...	...	...	...	20.0
XIV. CONGENITAL MALFORMATIONS	14.3	13.5	16.5	15.0	15.5	12.8	16.3	12.7	12.4	8.9	12.1	9.8	...
A127 Spina bifida and meningocele	2.2	1.9	3.1	2.8	2.0	2.8	2.7	1.8	1.7	0.5	1.0	0.9	4.0
A Without hydrocephalus	1.0	0.8	1.2	0.9	0.9	0.6	1.5	0.5	0.7	0.5	0.5	0.4	...
B With hydrocephalus	1.2	1.1	1.8	1.9	1.1	2.1	1.2	1.2	0.9	0.5	0.6	0.5	4.0
A128 Congenital malformations of circulatory system	6.3	6.0	7.3	4.7	6.4	4.5	6.9	5.9	6.2	5.0	5.4	4.6	12.0
A129 All other congenital malformations	5.8	5.5	6.1	7.5	7.1	5.5	6.7	5.1	4.6	3.4	5.6	4.3	4.0
XV. CERTAIN DISEASES OF EARLY INFANCY	37.3	34.0	48.1	35.5	32.1	36.6	37.8	30.2	32.2	37.9	37.8	26.1	124.0
A130 Birth injuries	6.5	6.1	6.5	5.6	4.5	5.3	7.4	5.8	7.8	5.0	5.0	4.7	4.0
A131 Postnatal asphyxia and atelectasis	7.2	6.5	6.5	11.2	5.4	4.5	6.7	6.2	4.9	8.3	9.3	6.0	4.0
A132 Infections of the newborn	2.5	2.1	6.5	...	2.4	2.6	2.0	1.5	2.8	3.0	2.5	1.4	28.0
A133 Haemolytic disease of newborn	1.5	1.3	1.6	0.9	1.6	1.1	1.9	1.2	0.4	1.1	1.0	0.7	6.3
A134 All other defined diseases of early infancy	1.1	1.1	2.6	...	1.1	1.5	1.4	0.9	1.6	0.7	1.1	0.9	12.0
A135 Ill-defined diseases peculiar to early infancy, and immaturity unqualified	18.3	16.8	24.2	17.8	17.2	21.6	18.4	14.7	14.6	19.8	18.9	12.4	76.0
XVI. SYMPTOMS, SENILITY AND ILL-DEFINED CONDITIONS	6.5	5.7	31.8	13.1	3.8	7.5	3.7	2.8	2.8	5.5	21.7	3.5	52.0
A136 Senility without mention of psychosis	2.7	2.2	17.5	1.9	2.6	5.0	1.3	1.0	1.4	2.9	6.3	1.4	8.0
A137 Ill-defined and unknown causes	3.8	3.5	14.3	11.2	1.2	2.4	2.4	1.8	1.5	2.7	15.4	2.1	44.0

TABLE 18—DEATH RATES PER 100,000 POPULATION AT ALL AGES ACCORDING TO THE INTERNATIONAL INTERMEDIATE LIST OF 150 CAUSES, CANADA, 1964 (Continued)

CAUSE OF DEATH (Intermediate List) (7th Rev.)	Canada		Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon	Northwest Territories
	Canada													
	1963	1964												
EXVII. ACCIDENTS, POISONINGS AND VIOLENCE (CLASSIFICATION ACCORDING TO EXTERNAL CAUSE)														
AE138 Motor vehicle accidents	63.2	64.4	52.5	91.6	64.2	69.9	61.8	61.1	63.8	66.2	70.0	78.0	106.3	196.0
A Traffic accidents (810-825)	23.6	25.3	18.1	32.7	26.2	31.8	30.1	22.1	21.3	24.2	25.9	23.0	43.8	8.0
B Non-traffic accidents	23.1	24.7	17.7	31.8	25.5	31.4	29.7	21.6	20.6	23.3	25.1	22.2	43.8	8.0
AE139 Other transport accidents	0.4	0.6	0.4	0.9	0.7	0.3	0.4	0.6	0.7	0.8	0.8	0.9	...	...
A Drowning involving small boats (850)	3.5	3.0	6.5	6.5	3.9	3.1	2.0	3.1	3.4	2.0	2.0	4.7	...	20.0
B Drowning involving other water craft (851)	1.4	1.5	4.3	3.7	2.1	1.3	1.1	1.6	1.6	1.2	0.4	1.8	...	8.0
C Other transport	0.1	0.2	0.6	...	0.5	0.2	0.1	0.1	...	...	...	1.0	...	...
AE140 Accidental poisoning	1.9	1.3	1.6	2.8	1.3	1.6	0.8	1.4	1.9	0.8	1.6	1.8	...	12.0
AE141 Accidental falls	2.0	2.2	0.4	5.6	1.1	1.6	1.5	1.9	2.5	1.5	3.4	5.6	...	24.0
AE142 Accident caused by machinery	8.3	8.2	4.5	9.3	9.1	8.6	6.3	9.4	9.4	9.8	7.3	9.7	...	...
AE143 Accident caused by fire and explosion of combustible material	1.2	1.2	0.2	...	0.9	2.1	1.1	0.9	1.4	2.2	2.0	1.5	6.3	...
AE144 Accident caused by hot substance, corrosive liquid, steam and radiation	3.1	3.4	5.1	4.7	5.0	2.9	2.8	3.1	4.3	4.0	5.0	3.0	12.5	24.0
AE145 Accident caused by firearm	0.2	0.2	0.4	0.9	0.4	0.2	0.2	0.3	0.2	0.2	0.1	0.1	...	4.0
AE146 Accidental drowning	0.8	0.9	0.6	...	1.1	1.5	1.1	0.7	0.5	1.6	1.2	1.0	...	24.0
AE147 All other accidental causes	4.4	3.9	4.5	8.4	4.5	4.2	5.2	3.2	2.2	1.8	3.4	4.0	...	60.0
All accidental causes	7.1	6.5	7.9	12.1	5.3	7.0	4.7	6.4	7.0	8.1	7.1	10.1	12.5	164.0
All accidental causes	54.3	54.9	48.3	80.4	57.4	62.9	55.0	51.2	52.2	55.4	57.5	62.7	75.0	20.0
AE148 Suicide	7.6	8.2	3.5	11.2	5.3	6.3	5.8	8.7	9.8	9.0	11.0	13.6	25.0	12.0
AE149 Homicide and injury purposely inflicted by other persons (not in war)	1.3	1.3	0.8	...	1.6	0.6	1.0	1.2	1.7	1.8	1.5	1.7	6.3	...
AE150 Injury resulting from operations of war	*	*	...	...	...	...	...	0.1	0.1	...	...	...	...	...
NXVII. ACCIDENTS, POISONINGS AND VIOLENCE (CLASSIFICATION ACCORDING TO NATURE OF INJURY)														
AN138 Fracture of skull	63.2	64.4	52.5	91.6	64.2	69.9	61.8	61.1	63.8	66.2	70.0	78.0	106.3	196.0
AN139 Fracture of spine and trunk	14.4	14.8	9.0	12.1	14.7	13.0	20.0	12.5	11.8	10.7	13.8	13.8	31.3	...
AN140 Fracture of limbs	3.5	3.7	2.0	6.5	3.8	4.4	3.5	6.2	3.6	3.2	4.7	4.5	12.5	...
AN141 Dislocation without fracture	5.6	5.5	4.3	6.5	6.1	7.6	4.2	6.2	7.0	6.3	4.5	5.4	...	...
AN142 Sprains and strains of joints and adjacent muscles	*	*	...	...	...	...	...	0.1	...	0.1	0.1	...	...	...
AN143 Head injury (excluding fracture)	6.0	6.2	4.3	6.5	5.4	8.3	5.6	5.6	5.8	8.4	8.1	8.3	6.3	12.0
AN144 Internal injury of chest, abdomen and pelvis	10.1	10.6	5.7	12.1	9.9	15.4	8.8	9.8	10.3	14.7	14.1	14.0	18.8	16.0
AN145 Laceration and open wounds	1.0	1.0	1.0	1.9	0.8	1.6	0.8	1.0	0.5	0.7	1.7	1.4	...	12.0
AN146 Superficial injury, contusion and crushing with intact skin surface	0.1	0.1	...	...	0.1	...	0.1	0.1	0.1	...	0.1	0.1	...	...
AN147 Effects of foreign body entering through orifice	2.4	2.2	3.7	3.7	1.4	1.9	1.3	2.7	3.3	2.8	1.8	2.2	...	12.0
AN148 Burns	2.6	3.2	5.9	4.7	5.5	3.1	2.6	3.0	3.0	3.6	4.9	2.3	12.5	4.0
AN149 Effects of poisons	5.2	5.4	1.4	10.3	3.2	2.9	3.9	5.4	6.8	4.7	7.2	10.4	6.3	56.0
AN150 All other and unspecified effects of external causes	12.1	11.8	15.3	27.1	13.3	11.7	11.0	11.1	11.8	9.5	10.1	15.4	18.8	84.0

1. Per 100,000 females.
2. Per 100,000 males.
3. Per 100,000 live births.

TABLE 19—CERTAIN CAUSES OF DEATH BY NUMBERS AND RATES FOR EACH YEAR OF THE LAST DECENNIAL PERIOD

CAUSE OF DEATH	1964		1963		1962		1961		1960		1959		1958		1957		1956		1955	
	Number of Deaths	Rate per 100,000	Number of Deaths	Rate per 100,000	Number of Deaths	Rate per 100,000	Number of Deaths	Rate per 100,000	Number of Deaths	Rate per 100,000	Number of Deaths	Rate per 100,000	Number of Deaths	Rate per 100,000	Number of Deaths	Rate per 100,000	Number of Deaths	Rate per 100,000	Number of Deaths	Rate per 100,000
Diseases of the Heart	2995	208	2890	205	2818	205	2710	203	2800	218	2581	204	2431	202	2371	204	2298	204	2420	227
Cancer	1614	112	1615	114	1542	112	1360	102	1439	112	1357	109	1304	108	1262	108	1251	110	1234	116
Diseases of the Arteries	310	21	287	20	295	21	249	17	268	20	266	21	267	22	254	21	173	15	173	16
Violent Deaths (suicide excepted)	845	58	780	55	734	53	722	54	713	55	679	54	708	58	640	55	667	59	672	63
Pneumonia (all forms)	403	28	388	27	388	28	386	28	335	26	346	7	338	28	352	30	325	28	326	30
Pulmonary Tuberculosis	26	1	30	2	24	2	27	2	27	2	37	2	35	2	60	5	36	3	64	6
Influenza	12	...	68	4	45	3	17	1	28	2	36	2	21	1	135	11	35	3	44	4
Nephritis	52	3	56	3	67	4	60	4	54	4	49	3	59	4	60	5	77	6	62	6
Appendicitis	20	1	12	...	11	...	12	...	11	...	11	...	11	...	15	1	8	...	9	...
Suicides	157	11	107	7	116	8	129	9	119	9	117	9	111	9	105	8	115	10	96	9
Cerebral Haemorrhage	899	62	893	70	957	69	1008	75	934	72	952	76	930	77	939	80	806	71	856	80
Diabetes Mellitus	156	11	110	7	106	7	134	10	144	11	136	10	119	9	141	12	98	8	123	11
Diarrhoea and Enteritis	44	3	63	4	82	5	69	5	67	5	56	4	69	5	59	5	64	5	54	5
Puerperal Causes	8	...	11	...	16	1	9	...	7	...	14	1	17	1	12	1	14	1	15	1
Whooping Cough	2	...	2	...	1	...	1	...	3	...	5	...	2	...	4	...	3	...	1	...
Scarlet Fever .....	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria .....	...	...	3	...	...	...	1	...	1	...	1	...	2	...	1	...	...	...	1	...
Typhoid and Paratyphoid .....	...	...	...	...	...	...	4	...	...	...	...	...	...	...	6	...	...	...	1	...
Measles	9	...	10	...	5	...	...	...	...	...	3	...	4	...	16	1	2	...	24	2
Poliomyelitis and Infectious Encephalitis	3	...	4	...	5	...	7	...	16	1	14	1	8	...	8	...	9	...	8	...

[illegible]

[illegible]

[illegible]

TABLE 22—SELECTED CAUSES OF INFANT DEATH BY SEX AND AGE AT DEATH, OF INDIANS, ALBERTA, 1964

[illegible]

DEPARTMENT OF VITAL STATISTICS

TABLE 24—LIVE BIRTHS OF INDIANS BY MONTHS, ALBERTA, 1964

MONTHS												
Total	January	February	March	April	May	June	July	August	September	October	November	December
2,243	189	189	200	187	181	181	186	199	178	182	188	183

TABLE 25—LIVE BIRTHS OF REGISTERED INDIANS BY MONTHS, ALBERTA, 1964

MONTHS												
Total	January	February	March	April	May	June	July	August	September	October	November	December
1,261	109	102	118	116	98	93	107	105	99	111	103	100

TABLE 26—LEGITIMATE AND ILLEGITIMATE BIRTHS OF INDIANS
(EXCLUSIVE OF STILLBIRTHS) ALBERTA, 1964

Total Births			Legitimate			Illegitimate		
Total	Male	Female	Total	Male	Female	Total	Male	Female
2243	1173	1070	1372	714	658	871	459	412

TABLE 27—LEGITIMATE AND ILLEGITIMATE BIRTHS OF REGISTERED INDIANS
(EXCLUSIVE OF STILLBIRTHS) ALBERTA, 1964

Total Births			Legitimate			Illegitimate		
Total	Male	Female	Total	Male	Female	Total	Male	Female
1261	670	611	754	402	372	507	268	239

TABLE 28—LIVE BIRTHS OF INDIANS BY AGE OF PARENTS, ALBERTA, 1964

AGE OF MOTHER	AGE OF FATHER											Total born to married mothers	Born to un-married mothers	Born to all mothers
	Under 20	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65 and over			
13 years													1	1
14 years													4	4
15 years		1	1									2	13	15
16 years	1	4	1	1								7	39	46
17 years	2	17	4		1							24	63	87
18 years	1	30	12	6								49	72	121
19 years	3	37	13	9	1							63	69	132
20 years	2	28	18	6	2		1					57	67	124
21 years	2	28	38	12	2							82	63	145
22 years	2	21	38	18	3	2						85	65	150
23 years		28	49	19	2	1		1				100	55	155
24 years		16	53	22	4		1					96	32	128
25 years		4	37	37	13	1						92	42	134
26 years		6	30	26	6	1	1	1				71	34	105
27 years			24	28	3	3		2				60	28	88
28 years			9	24	10	4		1			1	49	31	80
29 years		1	11	37	16	7		1				73	28	101
30 years			5	32	9	9						55	20	75
31 years			3	9	12	3	1	1				30	20	50
32 years		1	4	23	14	7	3	1				53	18	71
33 years			1	19	18	9	1	3	1			52	17	69
34 years			2	11	23	6	6		1			49	23	72
35 years			1	4	20	8	1					34	12	46
36 years			1	4	15	8	8		1			37	13	50
37 years			1	2	8	10	3	2	2	1		29	8	37
38 years			2	1	3	13	4	3	1	1		28	8	36
39 years				1	7	8	6	1				23	7	30
40 years				1	5	8	2	7	1			24	9	33
41 years					1	2	6		1			10	2	12
42 years					2	8	6	3	1			20	4	24
43 years						1	1	4	1	1		8	2	10
44 years					1		2	2				5	1	6
45 years							1	1				2		2
46 years							1	1				2		2
47 years														
48 years														
49 years														
50 and over														
Not stated											1	1	1	2
Total fathers	13	222	358	352	201	119	55	35	10	3	2	2 1372	871	2243

TABLE 29—LIVE BIRTHS OF REGISTERED INDIANS BY AGE OF PARENTS,
ALBERTA, 1964

AGE OF MOTHER	AGE OF FATHER											Total born to married mothers	Born to un-married mothers	Born to all mothers
	Under 20	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65 and over			
14 years	...	...	...	...	...	...	...	...	...	...	...	1	1	1
15 years	...	1	...	...	...	...	...	...	...	...	...	1	8	9
16 years	1	3	...	1	...	...	...	...	...	...	...	5	17	22
17 years	2	8	2	...	...	...	...	...	...	...	...	12	33	45
18 years	1	12	5	1	...	...	...	...	...	...	...	19	46	65
19 years	2	27	9	3	...	...	...	...	...	...	...	41	46	87
20 years	1	17	11	2	...	...	1	...	...	...	...	32	35	67
21 years	1	17	24	4	...	...	...	...	...	...	...	46	39	85
22 years	1	8	18	8	3	1	...	...	...	...	...	39	40	79
23 years	...	18	25	10	...	...	...	...	...	...	...	53	30	83
24 years	...	7	28	12	1	...	1	...	...	...	...	49	23	72
25 years	...	3	23	20	4	...	...	...	...	...	...	50	22	72
26 years	...	5	16	14	2	1	...	1	...	...	...	39	25	64
27 years	...	...	18	14	1	...	...	1	...	...	...	34	19	53
28 years	...	...	2	11	2	3	...	1	...	...	...	19	21	40
29 years	...	1	7	23	10	3	...	1	...	...	...	45	20	65
30 years	...	...	2	21	8	5	...	...	...	...	...	36	10	46
31 years	...	...	3	5	4	1	...	1	...	...	1	15	6	21
32 years	...	...	4	10	8	5	...	...	...	...	...	27	8	35
33 years	...	...	1	10	14	5	1	1	...	...	...	32	12	44
34 years	...	...	2	7	20	2	2	...	1	...	...	34	11	45
35 years	...	...	...	4	11	4	1	...	...	...	...	20	6	26
36 years	...	...	1	2	12	4	6	...	1	...	...	26	7	33
37 years	...	...	...	1	5	6	2	2	2	1	...	19	7	26
38 years	...	...	1	...	...	9	2	1	1	...	...	14	2	16
39 years	...	...	...	1	2	4	3	...	...	...	...	10	4	14
40 years	...	...	...	...	3	4	1	3	1	...	...	12	5	17
41 years	...	...	...	...	1	1	1	...	1	...	...	6	1	7
42 years	...	...	...	...	2	4	3	1	1	...	...	11	1	12
43 years	...	...	...	...	...	1	1	2	...	...	...	4	1	5
44 years	...	...	...	...	1	...	1	1	...	...	...	3	...	3
45 years	...	...	...	...	...	...	...	1	...	...	...	1	...	1
46 years	...	...	...	...	...	...	...	...	...	...	...	...	...	...
47 years	...	...	...	...	...	...	...	...	...	...	...	...	...	...
48 years	...	...	...	...	...	...	...	...	...	...	...	...	...	...
49 years	...	...	...	...	...	...	...	...	...	...	...	...	...	...
50 and over	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Not stated	...	...	...	...	...	...	...	...	...	...	...	...	1	1
Total fathers	9	127	202	184	114	63	28	17	8	1	1	754	507	1261

TABLE 30—BIRTHS BY PLACE OF OCCURRENCE AND PLACE OF RESIDENCE, 1964

PLACE OF OCCURRENCE	PLACE OF RESIDENCE														
	Total (occurrence)	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	U.S.A.	Other
Total residence	453,422	14,680	2,727	18,314	15,338	130,845	152,729	21,754	22,682	36,169	35,897	514	1,266	467	40
Newfoundland	14,624	14,605		5		1	6					1	1	4	1
Prince Edward Island	2,739	3	2,707	9	5	3	4							8	
Nova Scotia	18,323	19	7	18,228	31	7	15			2				11	
New Brunswick	15,636	2	4	38	15,175	333	20	1			3	1	2	57	
Quebec	129,398	40	2	6	65	129,078	158	23	2	1	7		10	26	11
Ontario	153,878	9	6	17	12	1,264	152,247	23	9	18	5		48	248	10
Manitoba	22,070		1	3	2	7	86	21,615	245	17	11	2	9	34	1
Saskatchewan	22,634			2		1	7	68	22,281	245	7		9	10	1
Alberta	36,124			1		3	8	12	117	35,784	125	2	44	24	3
British Columbia	35,902			2	2	4	7	5	20	64	35,708	11	5	44	10
Yukon	507						2		1		11	492		1	
Northwest Territories	1,175						1		1	25		2	1,147		
U.S.A.	412	2		3	46	144	148	28	7	13	20				

TABLE 31—LIVE BIRTHS AND LIVE BIRTHS IN HOSPITAL BY OCCURRENCE AND RESIDENCE FOR CENSUS DIVISIONS, ALBERTA, 1964

CENSUS DIVISIONS	TOTAL BIRTHS				BIRTHS IN HOSPITALS			
	Total by Occurrence	Total by Residence	By Occurrence; Residence Elsewhere	By Residence; Occurrence Elsewhere	Total by Occurrence	Total by Residence	By Occurrence; Residence Elsewhere	By Residence; Occurrence Elsewhere
ALBERTA	36,124	36,169	340	385	35,762	35,802	338	378
Division No. 1	829	828	46	45	811	810	46	45
Division No. 2	2,073	1,962	188	77	2,042	1,931	188	77
Division No. 3	683	740	56	113	652	709	56	113
Division No. 4	309	322	51	64	298	311	51	64
Division No. 5	537	779	26	268	527	769	26	268
Division No. 6	8,999	8,737	412	150	8,962	8,700	411	149
Division No. 7	925	923	84	82	914	913	83	82
Division No. 8	1,995	2,111	94	210	1,989	2,105	93	209
Division No. 9	363	406	39	82	343	384	39	80
Division No. 10	1,273	1,481	140	348	1,264	1,473	139	348
Division No. 11	12,702	11,892	1,026	216	12,683	11,872	1,024	213
Division No. 12	1,598	1,631	113	146	1,571	1,603	112	144
Division No. 13	947	1,014	176	243	936	1,003	176	243
Division No. 14	326	586	17	277	320	579	17	276
Division No. 15	2,565	2,757	47	239	2,450	2,640	46	236

TABLE 32—LIVE BIRTHS AND LIVE BIRTHS IN HOSPITAL BY OCCURRENCE AND RESIDENCE FOR URBAN PLACES OF 1,000 POPULATION AND OVER, ALBERTA, 1964

CITY, TOWN OR VILLAGE	Total Births				Births in Hospitals			
	Total by Occurrence	Total by Residence	By Occurrence Residence Elsewhere	By Residence; Occurrence Elsewhere	Total by Occurrence	Total by Residence	By Occurrence Residence Elsewhere	By Residence; Occurrence Elsewhere
Athabasca	201	48	159	6	199	48	157	6
Barrhead	305	56	254	5	305	56	254	5
Bellevue	1	19	....	18	1	19	....	18
Black Diamond	....	12	....	12	....	12	....	12
Blairmore	7	41	5	39	6	40	5	39
Bonnyville	177	95	94	12	177	94	94	11
Bow Island	88	26	66	4	88	26	66	4
Bowness	2	223	....	221	....	220	....	220
Brooks	242	85	164	7	242	85	164	7
Calgary	8,466	7,651	935	120	8,449	7,636	932	119
Camrose	359	202	171	14	358	202	170	14
Cardston	119	58	77	16	118	58	76	16
Castor	98	18	80	....	98	18	80	....
Claresholm	54	38	23	7	54	38	23	7
Coaldale	96	61	50	15	96	61	50	15
Cold Lake	236	69	187	20	236	69	187	20
Coleman	8	42	1	35	7	41	1	35
Devon	16	24	9	17	16	23	9	16
Didsbury	123	33	94	4	123	33	94	4
Drayton Valley	276	136	161	21	276	136	161	21
Drumheller	232	105	133	6	231	105	132	6
Edmonton	11,688	8,397	3,423	132	11,677	8,388	3,420	131
Edson	159	97	101	39	195	97	101	39
Fairview	202	64	142	4	201	64	141	4
Fort Macleod	150	68	94	12	148	67	93	12
Fort Saskatchewan	1	91	....	90	....	90	....	90
Grand Centre	....	81	....	81	....	81	....	81
Grande Prairie	693	384	323	14	693	384	323	14
Grimshaw	....	56	....	56	....	56	....	56
Hanna	145	62	85	2	145	62	85	2
High Prairie	345	80	270	5	344	80	269	5
High River	174	34	141	1	174	34	141	1
Hinton	160	140	31	11	160	140	31	11
Innisfail	210	71	147	8	210	71	147	8
Jasper Place	2	1,147	1	1,146	2	1,146	1	1,145
Lac La Biche	244	70	186	12	243	70	185	12
Lacombe	226	80	153	7	226	80	153	7
Leduc	146	66	100	20	145	66	99	20
Lethbridge	1,124	768	395	39	1,123	767	395	39
Lloydminster	....	110	....	110	....	110	....	110
Magrath	52	19	37	4	51	19	36	4
McLennan	116	22	94	....	115	22	93	....
McMurray	63	34	38	9	63	34	38	9
Medicine Hat	722	541	190	9	722	541	190	9
Nanton	....	24	....	24	....	24	....	24
Okotoks	....	16	....	16	....	16	....	16
Olds	196	93	118	15	196	93	118	15
Peace River	359	172	195	8	359	172	195	8
Pincher Creek	156	76	90	10	155	75	90	10
Ponoka	195	98	105	8	194	98	104	8
Provost	123	34	90	1	123	34	90	1
Raymond	69	37	38	6	68	37	37	6
Redcliff	....	47	....	47	....	47	....	47
Red Deer	928	683	273	28	927	682	273	28
Redwater	....	16	....	16	....	16	....	16
Rimbey	115	36	81	2	112	34	80	2
Rocky Mountain House	187	117	82	12	187	117	82	12
St. Albert	....	288	....	288	....	288	....	288
St. Paul	324	124	210	10	324	124	210	10
Stettler	205	123	104	22	205	123	104	22
Stony Plain	111	34	87	10	111	34	87	10
Sylvan Lake	1	52	....	51	....	51	....	51
Taber	317	98	226	7	317	98	226	7
Three Hills	112	29	87	4	112	29	87	4
Valleyview	2	86	1	85	....	85	....	85
Vegreville	190	83	114	7	190	83	114	7
Vermilion	170	62	113	5	170	62	113	5
Viking	86	27	62	3	85	27	61	3
Vulcan	70	33	49	12	70	33	49	12
Wainwright	171	101	76	6	169	100	75	6
Westlock	266	60	212	6	265	59	212	6
Wetaskiwin	394	137	271	14	394	137	271	14
Whitecourt	1	103	1	103	1	103	1	103

TABLE 33—LIVE BIRTHS BY MONTHS IN ALBERTA, 1964

	Total	January	February	March	April	May	June	July	August	September	October	November	December
Province of Alberta	36,169	2,969	2,991	3,205	3,144	3,180	3,148	3,067	3,032	3,003	2,945	2,658	2,827
Male	18,510	1,477	1,538	1,639	1,640	1,607	1,651	1,561	1,586	1,486	1,479	1,380	1,466
Female	17,659	1,492	1,453	1,566	1,504	1,573	1,497	1,506	1,446	1,517	1,466	1,278	1,361

TABLE 34—LIVE BIRTHS FOR CENSUS DIVISIONS BY TYPE OF ATTENDANCE, ALBERTA, 1964

CENSUS DIVISIONS	Total	Attended by			
		Physician	Nurse	Midwife	Unattended and Not Stated
ALBERTA	36,169	35,774	141	172	82
Division No. 1	828	810	2	16	3
Division No. 2	1,962	1,932	...	27	3
Division No. 3	740	712	...	25	3
Division No. 4	322	312	...	5	5
Division No. 5	779	768	3	3	5
Division No. 6	8,737	8,718	...	5	14
Division No. 7	923	914	...	9	...
Division No. 8	2,111	2,109	1	1	...
Division No. 9	406	389	1	15	1
Division No. 10	1,481	1,479	1	1	...
Division No. 11	11,892	11,884	...	3	5
Division No. 12	1,631	1,565	47	10	9
Division No. 13	1,014	1,005	5	2	2
Division No. 14	586	579	...	6	1
Division No. 15	2,757	2,598	81	44	34

TABLE 35—LIVE BIRTHS IN INCORPORATED URBAN PLACES OF 1,000 POPULATION AND OVER, BY TYPE OF ATTENDANCE, ALBERTA, 1964

CITY. TOWN OR VILLAGE	Total	Attended by			
		Physician	Nurse	Midwife	Unattended and Not Stated
Athabasca	48	48	.....	.....	.....
Barrhead	56	56	.....	.....	.....
Bellevue	19	19	.....	.....	.....
Black Diamond	12	12	.....	.....	.....
Blairmore	41	41	.....	.....	.....
Bonnyville	95	94	.....	.....	1
Bow Island	26	26	.....	.....	.....
Bowness	223	223	.....	.....	.....
Brooks	85	85	.....	.....	.....
Calgary	7,651	7,644	.....	.....	7
Camrose	202	202	.....	.....	.....
Cardston	58	58	.....	.....	.....
Castor	18	18	.....	.....	.....
Claresholm	38	38	.....	.....	.....
Coaldale	61	61	.....	.....	.....
Cold Lake	69	69	.....	.....	.....
Coleman	42	42	.....	.....	.....
Devon	24	24	.....	.....	.....
Didsbury	33	33	.....	.....	.....
Drayton Valley	136	136	.....	.....	.....
Drumheller	105	105	.....	.....	.....
Edmonton	8,397	8,395	.....	.....	2
Edson	97	97	.....	.....	.....
Fairview	64	64	.....	.....	.....
Fort Macleod	68	68	.....	.....	.....
Fort Saskatchewan	91	91	.....	.....	.....
Grand Centre	81	81	.....	.....	.....
Grande Prairie	384	384	.....	.....	.....
Grimshaw	56	56	.....	.....	.....
Hanna	62	62	.....	.....	.....
High Prairie	80	80	.....	.....	.....
High River	34	34	.....	.....	.....
Hinton	140	140	.....	.....	.....
Innisfail	71	71	.....	.....	1
Jasper Place	1,147	1,146	.....	.....	1
Lac La Biche	70	70	.....	.....	.....
Lacombe	80	80	.....	.....	.....
Leduc	66	66	.....	.....	.....
Lethbridge	768	768	.....	.....	.....
Lloydminster	110	110	.....	.....	.....
Magrath	19	19	.....	.....	.....
McLennan	22	22	.....	.....	.....
McMurray	34	33	1	.....	.....
Medicine Hat	541	541	.....	.....	.....
Nanton	24	24	.....	.....	.....
Okotoks	16	16	.....	.....	.....
Olds	93	93	.....	.....	.....
Peace River	172	172	.....	.....	.....
Pincher Creek	76	76	.....	.....	.....
Ponoka	98	98	.....	.....	.....
Provost	34	34	.....	.....	.....
Raymond	37	37	.....	.....	.....
Redcliff	47	47	.....	.....	.....
Red Deer	683	683	.....	.....	.....
Redwater	16	16	.....	.....	.....
Rimbey	36	36	.....	.....	.....
Rocky Mountain House	117	116	1	.....	.....
St. Albert	288	288	.....	.....	.....
St. Paul	124	124	.....	.....	.....
Stettler	123	123	.....	.....	.....
Stony Plain	34	34	.....	.....	.....
Sylvan Lake	52	52	.....	.....	.....
Taber	98	98	.....	.....	.....
Three Hills	29	29	.....	.....	.....
Valleyview	86	86	.....	.....	.....
Vegreville	83	83	.....	.....	.....
Vermilion	62	62	.....	.....	.....
Viking	27	27	.....	.....	.....
Vulcan	33	33	.....	.....	.....
Wainwright	101	101	.....	.....	.....
Westlock	60	59	.....	.....	1
Wetaskiwin	137	137	.....	.....	.....
Whitecourt	103	103	.....	.....	.....

TABLE 38—MULTIPLE BIRTHS BY AGE OF MOTHER, ALBERTA, 1964

[illegible]

TABLE 39—LIVE BIRTHS BY PERIOD OF GESTATION AND BIRTH WEIGHT, ALBERTA, 1964

BIRTHWEIGHT (grams)	PERIOD OF GESTATION (weeks)																Total	Under 16	Not stated												
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31				32	33	34	35	36	37	38	39	40	41	42	43 or more
MALES																															
Total	18,540	1	2	3	12	6	14	6	17	16	28	24	40	26	50	40	94	71	354	173	595	737	1523	2658	8625	1922	995	287	9		
500 or less	28	1	2	1	6	4	4	3	3	3	3	1	1	1	3	4	2	1	1	1	3	6	1	1	2	1	4	4	1		
500-750	26	1	1	1	3	2	3	3	3	3	3	1	1	1	3	4	2	1	1	1	3	6	1	1	2	1	4	4	1		
751-1000	51	1	1	1	3	2	3	3	3	3	3	1	1	1	3	4	2	1	1	1	3	6	1	1	2	1	4	4	1		
1001-1250	53	1	1	1	3	2	3	3	3	3	3	1	1	1	3	4	2	1	1	1	3	6	1	1	2	1	4	4	1		
1251-1500	77	1	1	1	3	2	3	3	3	3	3	1	1	1	3	4	2	1	1	1	3	6	1	1	2	1	4	4	1		
1501-1750	81	1	1	1	3	2	3	3	3	3	3	1	1	1	3	4	2	1	1	1	3	6	1	1	2	1	4	4	1		
1751-2000	166	1	1	1	3	2	3	3	3	3	3	1	1	1	3	4	2	1	1	1	3	6	1	1	2	1	4	4	1		
2001-2250	264	1	1	1	3	2	3	3	3	3	3	1	1	1	3	4	2	1	1	1	3	6	1	1	2	1	4	4	1		
2251-2500	553	1	1	1	3	2	3	3	3	3	3	1	1	1	3	4	2	1	1	1	3	6	1	1	2	1	4	4	1		
2501-2750	1,093	1	1	1	3	2	3	3	3	3	3	1	1	1	3	4	2	1	1	1	3	6	1	1	2	1	4	4	1		
2751-3000	3,875	1	1	1	3	2	3	3	3	3	3	1	1	1	3	4	2	1	1	1	3	6	1	1	2	1	4	4	1		
3001-3250	3,686	1	1	1	3	2	3	3	3	3	3	1	1	1	3	4	2	1	1	1	3	6	1	1	2	1	4	4	1		
3251-3500	3,520	1	1	1	3	2	3	3	3	3	3	1	1	1	3	4	2	1	1	1	3	6	1	1	2	1	4	4	1		
3501-3750	3,342	1	1	1	3	2	3	3	3	3	3	1	1	1	3	4	2	1	1	1	3	6	1	1	2	1	4	4	1		
3751-4000	3,125	1	1	1	3	2	3	3	3	3	3	1	1	1	3	4	2	1	1	1	3	6	1	1	2	1	4	4	1		
4001-4250	1,113	1	1	1	3	2	3	3	3	3	3	1	1	1	3	4	2	1	1	1	3	6	1	1	2	1	4	4	1		
4251-4500	427	1	1	1	3	2	3	3	3	3	3	1	1	1	3	4	2	1	1	1	3	6	1	1	2	1	4	4	1		
4501-4750	217	1	1	1	3	2	3	3	3	3	3	1	1	1	3	4	2	1	1	1	3	6	1	1	2	1	4	4	1		
4751-5000	73	1	1	1	3	2	3	3	3	3	3	1	1	1	3	4	2	1	1	1	3	6	1	1	2	1	4	4	1		
5001-5250	23	1	1	1	3	2	3	3	3	3	3	1	1	1	3	4	2	1	1	1	3	6	1	1	2	1	4	4	1		
5251-5500	9	1	1	1	3	2	3	3	3	3	3	1	1	1	3	4	2	1	1	1	3	6	1	1	2	1	4	4	1		
5501-5750	4	1	1	1	3	2	3	3	3	3	3	1	1	1	3	4	2	1	1	1	3	6	1	1	2	1	4	4	1		
5751-6000	1	1	1	1	3	2	3	3	3	3	3	1	1	1	3	4	2	1	1	1	3	6	1	1	2	1	4	4	1		
6001-6250	1	1	1	1	3	2	3	3	3	3	3	1	1	1	3	4	2	1	1	1	3	6	1	1	2	1	4	4	1		
6251-6500	1	1	1	1	3	2	3	3	3	3	3	1	1	1	3	4	2	1	1	1	3	6	1	1	2	1	4	4	1		
6501 +	42	1	1	1	3	2	3	3	3	3	3	1	1	1	3	4	2	1	1	1	3	6	1	1	2	1	4	4	1		
Not stated																															

[illegible]

TABLE 41—MARRIAGES BY MONTH OF MARRIAGE, 1964, ALBERTA

Total	10,634
January	374
February	590
March	581
April	745
May	978
June	1,165
July	1,175
August	1,290
September	946
October	1,116
November	891
December	1,095

TABLE 42—MARRIAGES—AGES OF BRIDEGROOMS AND BRIDES, ALBERTA, 1964

[illegible]

TABLE 43—MARRIAGES, MARITAL STATUS OF BRIDEGROOM BY STATUS OF BRIDE, ALBERTA, 1964

	Total Marriages	MARRIAGES BETWEEN								
		Bachelors and			Widowers and			Div'ced Men and		
		Spinsters	Widows	Divorced Women	Spinsters	Widows	Divorced Women	Spinsters	Widows	Divorced Women
Alberta	10,634	8,778	231	449	90	222	48	426	100	290

TABLE 44—MARRIAGES, MARITAL STATUS BY AGE OF BRIDEGROOM, 1964

AGES	MARITAL STATUS			
	Total	Bachelors	Widowers	Divorced Me.
Under 20 years	709	708	.....	1
20 - 24 years	5,256	5,207	2	47
25 - 29 years	2,383	2,220	7	156
30 - 34 years	922	707	19	196
35 - 39 years	449	305	21	123
40 - 44 years	268	126	27	115
45 - 49 years	173	79	26	68
50 - 54 years	130	37	38	55
55 - 59 years	121	29	64	28
60 - 64 years	73	18	42	13
65 - 69 years	55	10	33	12
70 - 74 years	37	6	30	1
75 and over	57	5	51	1
Not stated	1	1	.....	.....
Total	10,634	9,458	360	816

TABLE 45—MARRIAGES, MARITAL STATUS BY AGE OF BRIDE, 1964

AGES	MARITAL STATUS			
	Total	Spinsters	Widows	Divorced Women
Under 20 years	3,669	3,662	3	4
20 - 24 years	4,497	4,334	21	142
25 - 29 years	1,021	796	30	195
30 - 34 years	426	249	37	140
35 - 39 years	280	118	47	115
40 - 44 years	223	66	65	92
45 - 49 years	167	29	81	57
50 - 54 years	119	18	77	24
55 - 59 years	91	10	68	13
60 - 64 years	57	6	49	2
65 - 69 years	39	3	33	3
70 - 74 years	29	2	27	.....
75 and over	16	1	15	.....
Not stated .....	.....	.....	.....	.....
Total	10,634	9,294	553	787

TABLE 46—MARRIAGES, BIRTHPLACE OF GROOM BY BIRTHPLACE OF BRIDE, ALBERTA, 1964

BIRTHPLACE OF GROOM	BIRTHPLACE OF BRIDE																
	CANADA																
	Total Grooms	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon	Northwest Territories	Province Unspecified	British Isles and Possessions	Europe	Asia
Unspecified	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Other	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
United States	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Asia	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Europe	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
British Isles and Possessions	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Province Unspecified	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Northwest Territories	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yukon	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
British Columbia	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Alberta	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Saskatchewan	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Manitoba	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ontario	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Quebec	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
New Brunswick	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Nova Scotia	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Prince Edward Island	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Newfoundland	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total	8,766	8085	15	14	63	31	246	290	1017	5991	335	2	12	297	271	3	101
Canada	19	17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Newfoundland	21	17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Prince Edward Island	21	17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Nova Scotia	105	94	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
New Brunswick	52	45	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Quebec	112	98	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ontario	413	375	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Manitoba	353	318	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Saskatchewan	1,301	1,208	3	4	8	8	34	51	287	758	50	2	8	188	16	1	1
Alberta	5,977	5,537	5	5	37	49	138	155	555	4,370	205	2	8	111	188	1	1
British Columbia	399	363	1	1	2	2	13	21	45	249	30	1	1	11	16	1	1
Yukon	4	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Northwest Territories	10	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Province Unspecified	384	280	2	2	3	23	16	34	34	184	11	1	1	79	7	2	2
British Isles and Possessions	1,152	576	1	1	7	3	19	83	83	393	30	1	1	55	505	2	13
Europe	65	18	1	1	1	1	8	6	21	104	9	1	1	14	13	2	44
United States	251	150	1	1	1	1	1	1	3	5	5	1	1	1	1	1	74
Other	16	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3
Unspecified	10,634	9,119	18	14	75	40	314	331	1,161	6,688	387	2	12	447	800	51	202
TOTAL	10,634	9,119	18	14	75	40	314	331	1,161	6,688	387	2	12	447	800	51	202

TABLE 47—MARRIAGES—RELIGIOUS DENOMINATION OF GROOM BY RELIGIOUS DENOMINATION OF BRIDE, ALBERTA, 1964

[illegible]

TABLE 48—STILLBIRTHS BY SEX AND PERIOD OF GESTATION, ALBERTA, 1964

PERIOD OF GESTATION	Male	Female
20 weeks	5	8
21 weeks	3	3
22 weeks	10	6
23 weeks	3	7
24 weeks	7	7
25 weeks	7	1
26 weeks	7	2
27 weeks	—	1
28 weeks	12	11
29 weeks	3	7
30 weeks	11	14
31 weeks	8	4
32 weeks	9	8
33 weeks	7	2
34 weeks	15	10
35 weeks	7	11
36 weeks	11	12
37 weeks	15	14
38 weeks	13	20
39 weeks	13	15
40 weeks	39	41
41 weeks	4	14
42 weeks	10	7
43 weeks	2	—
44 weeks	1	1
45 weeks	—	—
46 weeks	—	—
47 weeks	—	—
48 weeks	—	—
Not stated	2	—
Total 28+ weeks	182	191
Total 20+ weeks	224	226

TABLE 49—RATIO OF MALE TO FEMALE BIRTHS AND OF BIRTHS TO DEATHS

Year	Births of Males to 1,000 Births of Females	Ratio of Births to Deaths	Year	Births of Males to 1,000 Births of Females	Ratio of Births to Deaths
1905	1,059	3.13	1935	1,055	2.81
1906	1,094	2.07	1936	1,049	2.57
1907	1,075	2.96	1937	1,019	2.38
1908	1,077	2.73	1938	1,046	2.70
1909	1,086	2.59	1939	1,046	2.85
1910	1,065	2.69	1940	1,033	2.79
1911	1,103	2.43	1941	1,054	2.71
1912	1,084	2.43	1942	1,058	3.02
1913	1,053	2.67	1943	1,041	2.96
1914	1,081	3.30	1944	1,060	3.06
1915	1,000	3.74	1945	1,061	3.08
1916	1,063	3.29	1946	1,036	3.36
1917	1,061	3.25	1947	1,061	3.76
1918	1,069	1.88	1948	1,049	3.44
1919	1,074	2.56	1949	1,051	3.52
1920	1,055	2.92	1950	1,052	3.74
1921	1,055	3.32	1951	1,039	3.76
1922	1,034	3.06	1952	1,058	3.95
1923	1,072	3.13	1953	1,063	4.10
1924	1,036	2.97	1954	1,073	4.60
1925	1,036	2.97	1955	1,066	4.31
1926	1,053	2.80	1956	1,060	4.48
1927	1,065	2.94	1957	1,055	4.32
1928	1,064	2.75	1958	1,064	4.47
1929	1,042	2.71	1959	1,056	4.49
1930	1,027	3.21	1960	1,056	4.38
1931	1,075	3.25	1961	1,045	4.39
1932	1,052	3.08	1962	1,039	4.18
1933	1,053	3.01	1963	1,056	4.07
1934	1,032	3.04	1964	1,048	3.81

DEPARTMENT OF VITAL STATISTICS

TABLE 50—DIVORCES AND NULLITIES, BY JUDICIAL DISTRICTS
FOR THE YEAR 1964, ALBERTA

JUDICIAL DISTRICTS	DIVORCES			NULLITIES		
	Number of Divorces	Granted to Husband	Granted to Wife	Number of Nullities	Granted to Husband	Granted to Wife
Edmonton	641	242	399	2	....	2
Calgary	561	174	387	8	4	4
Lethbridge	55	26	29	....	....	....
Medicine Hat	27	10	17	....	....	....
Peace River	10	5	5	....	....	....
Grande Prairie	21	11	10	....	....	....
Hanna	3	2	1	....	....	....
Red Deer	48	16	32	1	1	....
Drumheller	5	4	1	....	....	....
Fort Macleod	7	3	4	....	....	....
Wetaskiwin	11	6	5	....	....	....
Vegreville .....	....	....	....	....	....	....
Totals	1389	499	890	11	5	6

TABLE 51—DIVORCES AND NULLITIES IN ALBERTA SINCE THE PASSING
OF THE ACT

YEAR	Granted to Husband	Granted to Wife	Total
1919	3	3	6
1920	74	26	100
1921	53	37	90
1922	80	49	129
1923	57	32	89
1924	66	53	119
1925	59	42	101
1926	79	75	154
1927	83	66	149
1928	91	84	175
1929	77	71	148
1930	64	87	151
1931	69	87	156
1932	68	81	149
1933	56	79	135
1934	62	106	168
1935	74	135	209
1936	74	135	209
1937	102	139	241
1938	105	162	267
1939	104	163	267
1940	119	154	273
1941	135	176	311
1942	179	201	380
1943	190	223	413
1944	245	243	488
1945	302	273	575
1946	494	480	974
1947	404	478	882
1948	302	357	659
1949	262	332	594
1950	249	311	560
1951	255	334	589
1952	239	391	630
1953	228	375	603
1954	224	384	608
1955	233	394	627
1956	278	410	688
1957	317	409	726
1958	295	457	752
1959	343	509	852
1960	399	566	965
1961	381	675	1056
1962	411	690	1101
1963	513	769	1282
1964	504	896	1400

TABLE 52—POPULATION, BIRTHS, MARRIAGES, DEATHS AND RATES FOR THE YEARS 1905 - 1964

Year	Population	Number of Births	Birth Rate	Number of Marriages	Marriage Rate	Number of Deaths	Death Rate	Infantile Death Rate per 1,000 Births	Maternal Death Rate per 10,000 Births	Natural Increase
1905	185,000	421	20.41	187	6.77	114	7.36	90.00	....	13.04
1906	236,000	3,003	20.05	927	8.08	1,091	6.68	100.27	63.3	13.36
1907	266,000	5,973	22.45	1,907	7.63	2,188	8.22	126.57	60.2	14.22
1908	301,000	6,897	22.91	2,384	7.92	2,662	8.81	....	....	14.07
1909	306,000	8,321	24.49	3,086	9.18	3,526	10.49	129.49	86.3	14.00
1910	374,000	8,813	23.56	3,630	9.70	3,618	9.67	134.46	97.5	13.88
1911	400,000	10,284	25.71	4,429	11.07	4,232	10.58	124.75	82.6	15.13
1912	429,000	11,871	28.47	5,053	12.12	4,432	10.63	120.47	70.7	17.84
1913	459,000	13,685	30.75	4,623	10.39	4,417	9.32	100.54	61.3	21.43
1914	480,000	13,452	28.90	4,202	9.06	3,588	7.73	87.9	57.9	21.26
1915	496,000	13,331	27.87	4,230	8.53	4,058	8.18	90.5	72.0	18.69
1916	508,000	13,576	27.01	4,270	8.54	4,047	8.09	87.30	64.8	18.92
1917	522,000	14,890	28.52	4,048	6.98	7,924	13.86	107.10	55.1	11.86
1918	522,000	14,130	23.95	4,718	7.90	5,507	9.33	110.30	64.4	14.62
1919	565,000	16,565	26.72	5,110	8.24	5,675	9.15	93.70	83.8	17.57
1920	588,000	16,414	27.89	4,661	7.92	4,940	8.39	85.65	72.4	19.50
1921	592,000	16,163	26.44	4,272	6.99	5,281	8.62	91.93	66.8	17.83
1922	593,000	15,153	25.75	4,177	6.09	4,843	8.06	90.54	55.0	18.75
1923	597,000	14,598	24.74	4,160	7.50	4,907	8.30	82.40	61.8	16.42
1924	602,000	15,014	25.02	4,363	7.27	4,717	7.86	72.90	57.6	16.16
1925	608,000	14,455	23.79	4,498	7.40	5,156	8.49	81.63	58.2	15.31
1926	623,000	14,897	24.03	4,707	7.58	5,059	8.16	74.51	63.8	15.87
1927	638,000	15,692	24.79	5,776	9.12	5,699	9.00	76.50	67.5	15.79
1928	684,000	16,924	26.19	5,776	9.12	5,699	9.00	76.50	67.5	15.79
1929	708,000	17,649	26.74	6,004	9.29	6,239	9.65	77.40	72.6	16.54
1930	732,000	17,252	23.57	5,334	8.08	5,396	8.33	63.57	64.6	18.41
1931	740,000	16,990	22.96	5,142	7.02	5,302	7.24	69.38	50.4	16.32
1932	748,000	16,123	21.33	5,054	6.83	5,521	7.46	58.68	37.7	15.50
1933	756,000	16,236	21.10	5,389	7.10	5,346	7.07	59.90	45.3	14.24
1934	770,000	16,183	21.0	6,053	7.87	5,337	6.93	54.89	49.9	14.01
1935	772,782	15,786	20.4	6,010	7.7	5,729	7.3	57.8	42.6	14.0
1936	778,000	15,903	20.4	6,020	7.8	6,147	8.0	60.0	57.6	12.5
1937	783,000	15,891	20.3	6,345	8.2	6,261	8.0	63.0	48.4	12.4
1938	789,000	16,470	20.9	6,993	8.9	5,871	7.5	51.0	42.8	12.8
1939	790,000	17,359	21.8	7,838	9.9	5,789	7.3	46.0	35.8	13.6
1940	796,169	18,317	22.7	8,782	11.0	6,203	7.8	48.0	39.7	14.1
1941	805,000	19,290	23.7	8,470	10.7	6,385	8.0	51.0	31.2	13.7
1942	818,000	19,373	24.1	9,034	11.2	6,091	7.5	38.0	23.5	15.2
1943	826,000	19,939	24.1	7,771	9.8	7,345	7.6	30.0	27.0	22.4
1944	833,330	22,184	26.6	7,299	8.9	6,524	8.2	42.0	16.0	16.1
1945	822,000	22,631	30.0	9,310	8.8	6,320	7.7	46.0	24.1	16.0
1946	822,000	22,631	30.0	9,478	11.8	6,454	7.8	43.0	14.4	16.2
1947	822,000	22,631	30.0	8,797	10.7	6,601	8.2	42.5	8.9	19.3

TABLE 52—POPULATION, BIRTHS, MARRIAGES, DEATHS AND RATES FOR THE YEARS 1905 - 1964 (Continued)

Year	Population	Number of Births	Birth Rate	Number of Marriages	Marriage Rate	Number of Deaths	Death Rate	Infantile Death Rate per 1,000 Births	Maternal Death Rate per 10,000 Births	Natural Increase
1948	846,000	24,075	28.5	8,844	10.5	6,543	8.0	37.0	12.0	22.0
1949	871,000	24,935	28.7	9,037	10.4	6,987	8.0	39.0	10.0	20.2
1950	895,000	25,625	28.7	9,294	10.4	7,083	8.2	33.0	7.4	20.5
1951	939,501	27,003	28.7	9,305	9.9	6,856	7.7	32.0	5.6	21.0
1952	970,000	29,105	30.0	9,514	9.8	7,646	7.6	30.0	5.2	23.7
1953	1,002,000	31,376	31.3	10,126	10.1	7,167	7.6	30.0	6.7	21.1
1954	1,039,000	33,593	32.3	9,960	9.6	7,520	7.2	26.0	3.3	22.3
1955	1,066,000	34,357	32.2	9,844	9.2	7,956	7.5	26.0	4.4	23.1
1956	1,123,116	34,951	31.1	9,965	8.9	7,786	6.9	25.0	4.0	24.2
1957	1,160,000	35,719	30.8	10,117	8.7	8,255	7.1	27.0	3.4	23.7
1958	1,201,000	36,842	30.7	10,186	8.5	8,237	6.9	25.0	4.6	23.8
1959	1,243,000	38,080	30.6	10,402	8.4	8,481	6.9	24.0	3.7	23.8
1960	1,283,000	39,009	30.4	10,482	8.2	8,888	6.9	26.2	1.8	23.5
1961	1,331,944	38,914	29.2	10,474	7.9	8,863	6.7	27.0	2.3	22.5
1962	1,370,000	38,804	28.3	10,423	7.6	9,264	6.8	25.0	4.1	21.5
1963	1,405,000	38,467	27.4	10,163	7.2	9,444	6.7	23.6	2.9	20.7
1964	1,432,000	36,173	25.3	10,634	7.4	9,482	6.6	23.9	2.2	18.7

